CATALOGUE OF THE CRABS OF THE FAMILY MAIIDÆ IN THE U. S. NATIONAL MUSEUM.

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(With Plates III–VIII.)

In the following catalogue the same general plan has been followed as in the author's "Catalogue of Periceridæ" published in the Proceedings of the Museum for 1892, No. 901. Of the 34 known genera, but 19 are represented in the collection and by 39 species only. This includes one new genus and 5 new species described below. Of the 39 species, 6 are European; 17 are North American, of which 7 are found only on the east coast, and 8 on the west coast, while 2 extend by the way of the Arctic Ocean from the Atlantic to the Pacific; 1 species is from the east coast of South America, 2 are confined to Japan, while 13 are found in various localities throughout the Indo-Pacific. At the close of the catalogue a list of 100 species and varieties not in the collection is given in the hope that they may be obtained in the future through gifts and exchange.

In an appendix are added descriptions by Dr. William Stimpson of Maiidæ collected by the North Pacific Exploring Expedition. Illustrations of 2 species not hitherto figured are published, the original drawings having been enlarged by Mr. A. H. Baldwin, who furnished also the other drawings for this catalogue.

MAIIDÆ.

Maioid brachyurans with eyes retractile in distinctly defined orbits which are often more or less incomplete below or marked with open fissures in their upper and lower margins. Basal antennal joint always more or less enlarged.

KEY TO SUBFAMILIES.

A′ Carapace usually subtriangular. Rostrum well developed. Anterior legs in male usually enlarged; fingers not excavate at tips ..... *Maiinæ*

A″ Carapace broadly triangular or oval or nearly circular. Rostrum very short or obsolete. Anterior legs in male small, slender; fingers usually excavate at tips ..... *Schizophrysinæ*

A'' Carapace suboblong. Rostrum vertically or nearly vertically deflexed, usually broad, lamellate. Fingers acute at tips. Basal antennal joint very much enlarged. Eye peduncles long, geniculated, and laterally projecting.. *Micippinæ*

KEY TO GENERA.

Maiinæ.

A' Rostrum vertically compressed and bifid or notched at the extremity. Orbits shallow and very open above; eyes when retracted visible from above; eye peduncles short and thick.
B' Ambulatory legs extremely long and slender.
C' (Orbits with two fissures above and below)..... *Egeria*
C'' (Orbits with one fissure above and below)..... *Chorilibinia*
B'' Ambulatory legs of moderate length.
C' Ambulatory legs with the merus joints dilated in winglike expansions.. *Hemus*
C'' Ambulatory legs compressed and flattened..... *Chionœcetes*
C''' Ambulatory legs subcylindrical.
D' Second joint of antenna dilated..... *Hyas*
D'' Second joint of antenna slender, subcylindrical.
E' Rostrum with lateral margins involuted..... *Calocerus*
E'' Rostrum with lateral margins not involuted..... *Herbstia*
A'' Rostrum composed of two more or less distinct divergent spines. Orbits deep; eyes when retracted, concealed; eyes small; eye peduncles slender.
B' Orbits large, directed forward, usually very incomplete below; upper margin usually prominent, with two deep fissures and long spines.
C' Flagellum of antenna arising within the orbital cavity..... *Maia*
C'' Flagellum of antenna arising within the orbital margin, and separated from the cavity of the orbit by a narrow process of the basal joint.
D' Carapace pyriform.
E' (Rostral spines short)..... *Phycodes**
E'' (Rostral spines long)..... *Oplopisa*
D'' Carapace subtriangular.
E' Merus joint of outer maxillipeds notched for the insertion of the next joint.
F' Ambulatory legs spinose..... *Chlorinoides*
F'' Ambulatory legs unarmed..... *Paramithrax*
E'' (Merus joint of outer maxillipeds with anterior margin entire). *Acanthophrys*
B'' Orbits small, directed outward. Orbital margin not prominent, with one or two hiatuses above and one below.
C' First ambulatory legs very long.
D' Spines of rostrum with an accessory spinule near the extremity..... *Naxia*
D'' Spines of rostrum without an accessory spinule.
E' Basal antennal joint narrow, with or without a spine at the antero-external angle..... *Hyastenus*
E'' (Basal antennal joint dilated and unarmed externally, unidentate posteriorly and in the middle)..... *Lepidonaxia*
C'' First ambulatory legs of moderate length.
D' Præocular spine present.
E' Rostral spines parallel or in contact to near their extremities..... *Pisa*
E'' Rostral spines divergent.
F' Chelipeds much smaller than the ambulatory legs..... *Lepteces*
F'' Chelipeds as large as the ambulatory legs
G' Ambulatory legs armed with spines..... *Nibilia*
G'' Ambulatory legs unarmed.

*There is some doubt as to the proper position of this genus.

H′ Second and third joints of antennæ dilated ..... *Scyra*
H″ Second and third joints of antennæ not dilated.
K′ (Palms elongated) ..... *Notolopas*
K″ (Palms robust) ..... *Rochinia*
D″ Præocular spine absent.
E′ Basal antennal joint elongated, its distal portion visible from above. *Pelia*
E″ Basal antennal joint with its distal portion not visible from above.
F′ (Spines of rostrum subparallel) ..... *Pisoides*
F″ Spines of rostrum laminate at base, slightly divergent ..... *Eurynome*
F‴ (Spines of rostrum deflexed) ..... *Micippoides*

*Schizophrysinæ.**

A′ (Fingers acute at tips) ..... *Temnonotus*
A″ Fingers excavate at tips.
B′ Spines of rostrum with one or more accessory spines ..... *Schizophrys*
B″ (Spines of rostrum simple) ..... *Cyclax*

Micippinæ.

A′ Orbits very incomplete, defined above, open below.
B′ Orbits tubular.
C′ (Præocular spines small) ..... *Criocarcinus*
C″ (Præocular spines much enlarged) ..... *Picrocerus*
B″ Orbits not tubular ..... *Pseudomicippa*
A″ Orbits narrowly oval, well defined ..... *Micippa*
A‴ (Orbits scarcely defined either above or below) ..... *Paramicippa*

KEY TO SPECIES EXAMINED.

Hemus.

Ambulatory legs with the merus joints dilated in winglike expansions ... *cristulipes*

Hyas.

A′ Carapace subtriangular; hepatic region not dilated laterally. Basal antennal joint subtriangular ..... *araneus*
A″ Carapace lyrate; hepatic region dilated laterally. Basal antennal joint with sides nearly parallel.
B′ Posterior angle of hepatic projection rounded. Basal antennal joint without a large tubercle at the antero-external angle ..... *coarctatus*
B″ Posterior angle of hepatic projection subacute. Basal antennal joint with a large tubercle at the antero-external angle ..... *lyratus*

Chionœcetes.

A′ Carapace tuberculose; branchial regions flattened ..... *opilio*
A″ Carapace spinose; branchial regions dilated ..... *tanneri*

Herbstia.

A′ Inferior orbital margin not toothed. Legs not spinose ..... *condyliata*
A″ Inferior orbital margin toothed. Legs spinose ..... (*Herbstiella*) *camptacantha*

*The genus *Pleurophricus*, A. Milne Edwards, which Miers places in this division of the Maiidæ, is classed by Ortmann among the Corystoidea.

Calocerus.

Carapace with six median spines..... *grandis*

Maia.

A' Carapace spinose above. Chelipeds in male enlarged..... *squinado*
A'' Carapace tuberculose above. Chelipeds slender..... *verrucosa*

Paramithrax.

A' Chelipeds in male enlarged; hand compressed; carpus with two longitudinal ridges, the outer usually oblique..... Subgenus *Paramithrax*
B' Carpus with inner ridge smooth..... *peronii*
B'' Carpus with ridges spinulose..... *edwardsii*
B''' Carpus with inner ridge cut into lobes..... *latreillei*
B'''' Carpus, including ridges, granulose..... *sternocostulatus*
A'' Chelipeds in male elongated; hand and carpus subcylindrical; carpus not ridged..... Subgenus *Leptomithrax*
B' Carapace, merus, and carpus spinulose..... *australis*
B'' Carapace, merus, and carpus covered with flattened tubercles..... *longimanus*

Chlorinoides.

A' Rostral horns bifurcate..... *spatulifer*
A'' Rostral horns not bifurcate..... *longispinus*

Pisa.

A' Chelipeds in male with palms dilated; fingers arched, and meeting only at the ends..... *tetraodon*
A'' Chelipeds in male with palms elongated, slender; fingers almost straight, and meeting along their inner edges..... *tribulus*

Lepteces.

Chelipeds much smaller than the ambulatory legs..... *ornatus*

Hyastenus.

A' Carapace smooth above, two-spined. Præocular angle subacute..... *diacanthus*
A'' Carapace nearly smooth above, three-spined. Præocular angle obtuse..... *caribbæus*
A''' Carapace tuberculose or spinulose. Præocular angle with a sharp spine.
B' Subhepatic region with a prominent spine..... *Hyastenus*, sp.
B'' Subhepatic region without a prominent spine..... *longipes*

Naxia.

Carapace covered with strong spines. Rostral horns parallel for half their length..... *robillardi*

Scyra.

Carapace with a tubercle at the postero lateral angle..... *acutifrons*

Eurynome.

Carapace triangular. Legs spinuliferous. Superior orbital fissure open..... *aspera*

Pelia.

A′ Hands in male with margins tapering to the fingers, which have their edges meeting throughout ..... *pacifica*
A″ Hands in male with margins subparallel; fingers gaping at base.
B′ Basal antennal joint with its distal half visible from above.
C′ Rostrum moderately deflexed ..... *mutica*
C″ Rostrum strongly deflexed ..... *rotunda*
B″ Basal antennal joint with only its extremity visible from above ..... *Pelia*, sp.

Nibilia.

Ambulatory legs armed with spines ..... *crinacea*

Schizophrys.

Carapace covered with granules and small spines ..... *aspera*

Pseudomicippa.

Carapace with prominent tubercles. Sternum without granulated crests ... *varians*

Micippa.

A′ Rostrum terminating in four spines ..... *mascarenica*
A″ Rostrum terminating in two lobes.
B′ Lobes rounded externally, with the antero-internal angles acute ..... *spinosa*
B″ Lobes narrow or spinous ..... *thalia*

Hemus cristulipes A. Milne Edwards.

Miss. Sci. au Mexique, pt. 5, 1, p. 88, pl. XVI, fig. 1, 1875. Miers, Jour. Linn. Soc. London, XIV, p. 651, 1879. Aurivillius, K. Sv. Vet.-Akad. Handl., Bd. 23, 1, p. 45, pl. 3, fig. 6, 1889.

Off Cape Catoche, Yucatan, lat. 22° 07′ 30″ N., long. 87° 06′ W., 21 fathoms, white rock, coral; station 2363, U. S. Fish Commission steamer *Albatross*, 1885; one female (15167).

Length, 7; greatest width, 5.7mm.

Previously recorded from the Gulf of Mexico and Central America.

Hyas araneus (Linné).

Cancer araneus Linné, (Syst. Nat., ed. 12, p. 1044, 1766).

Hyas araneus Leach (Mal. Podoph. Brit., pl. XXI A, 1815); Trans. Linn. Soc. London, XI, p. 328, 1815, and synonymy. Stimpson, Ann. Lyc. Nat. Hist. N. Y., VII, p. 179, 1860. Packard, Mem. Boston Soc. Nat. Hist., I, p. 302, 1867 (*araneus*). Smith, Trans. Conn. Acad., V, p. 43, 1879. Carrington and Lovett, Zoölogist (3), V, p. 411, 1881. Miers, Challenger Rept., Zoöl., XVII, p. 47, 1886 (*araneus*), and synonymy. Scott, 6th Ann. Rept. Fishery Board for Scotland, pt. III, p. 255, 1888. Aurivillius, K. Sv. Vet.-Akad. Handl., Bd. 23, 1, p. 45, pl. 1, figs. 1–5, 1889. G. Y. and A. F. Dixon, Proc. Roy. Irish Acad. (3), II, p. 30, 1891 (habits).

RECORD OF SPECIMENS EXAMINED.

Bjonen's Bay, Spitzbergen, 7 to 10 fathoms; Dr. Eckstein, U. S. Navy, U. S. S. *Alliance*, August 10, 1881 (1511).

Kielerbucht, Germany; K. Möbius (3304).

Hebrides; A. M. Norman (6317).

Greenland; Dr. Pavy, Howgate Expedition (3571).

Disco, Godhavn Harbor, Greenland; Ensign H. G. Dresel, U. S. Navy, July, 1883 (14990).

Labrador; W. Henry (16280); L. M. Turner, November, 1882 (5844).

L'Anse au Loup and Forteau Bay, Labrador, 15 to 25 fathoms, sand, kelp, and dirt; W. A. Stearns, 1882 (5242, 10031).

St. Johns, Newfoundland; U. S. Fish Commission, 1885 (10138).

Gulf of Maine; U. S Fish Commission (3826).

Gloucester, outer harbor, Mass., 8 to 10 fathoms; U. S. Fish Commission (2867).

Off Cape Cod, Mass., 15 to 106 fathoms; U. S. Fish Commission.

Eastern coast of New England; S. M. Johnson and Bro. (3319).

Northeast coast of North America; U. S. Fish Commission steamer *Albatross*, 1885 and 1886:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		° ′			°			
10218	2431	43 00 00	50 47 30	129	33.5	yl. S. bk. Sp.	June 23	
10220	2437	43 36 00	50 05 00	37	35.8	crs. brk. Sh. brk. St.	24	
10221	2438	43 36 00	50 03 50	37	36.8	gn. S. bk. Sp. brk. Sh.	24	
10222	2439	43 37 00	49 56 30	36	37.8	wh. S. bk. Sp.	24	
10224	2444	45 59 00	49 45 30	39	34.4	wh. S. brk. Sh	25	
10225	2445	46 09 30	49 48 30	39	33.5	brk. Sh.	25	Abundant.
10226	2446	46 20 00	49 52 00	40	35.3	brk. Sh.	25	Abundant.
10229	2452	47 04 00	50 48 00	89	29.7	fne. gn. S.	26	
10230	2461	45 47 00	54 13 30	59	30	fne. S. bk. Sp.	July 3	
10231	2463	45 44 00	54 27 00	45	30	brk. Sh.	3	Abundant.
10232	2464	45 40 00	54 41 00	42	32	wh. bk. S. brk. Sh.	3	Abundant.
10233	2465	45 35 00	55 01 00	67	30	bk. gy. S.	3	
10234	2466	45 29 00	55 24 00	67	30	Co.	3	Abundant.
10235	2467	45 23 00	55 41 00	78	35.8	fne. wh. S. bk. Sp.	3	
10236	2467	.....	.....	.....	.....	.....		3 from stomach of cod.
10237	2468	45 11 30	55 51 30	42	33	fne. bk. S.	3	
10238	2472	44 27 30	57 10 45	137	40	crs. S. G.	4	
10239	2474	44 28 30	57 10 45	133	40	hrd.	4	
10240	2490	45 27 30	58 27 45	50	.....	G. P.	6	
10241	2492	45 22 00	58 43 45	75	33.3	wh. S.	6	Abundant.
10245	2496	45 07 30	59 27 45	44	32.2	crs. yl. S. P.	6	Stomach of cod.
10247	2503	44 22 30	61 00 15	47	35	P.	7	Stomach of cod.
11867	2698	45 07 00	55 09 00	90	.....	gy. S. bk. Sp. P.	Aug. 22	
11868	2699	45 04 00	55 23 00	72	.....	Co.	22	Abundant.
11870	2701	44 56 00	55 49 30	75	.....	gy. S. bk. Sp.	22	

Gloucester donations, U. S. Fish Commission.

Grand Bank (3781).

St. Peters Bank (14456).

Banquereau, 50 fathoms.

South of Banquereau, 250 to 350 fathoms; one female with eggs (3790).

Off Little Hope Light, Nova Scotia, 35 to 60 fathoms (3783).

The largest specimen is that presented by S. M. Johnson & Bro., the exact locality unknown. Length of carapace, 94; width, 72 millimeters.

Besides the range indicated above, this species has been recorded from France, Norway, Iceland, and the sea of Okhotsk, by various authors (Smith, loc. cit.).

Hyas coarctatus Leach.

Hyas coarctatus Leach, (Mala. Podoph. Brit., pl. XXI B, figs. 1 and 2, 1815); Trans. Linn. Soc. London, XI, p. 329, 1815. Leidy, Jour. Phila. Acad. (2), III, p. 17, 1855. Stimpson, Boston Jour. Nat. Hist., VI, p. 150, 1857. Packard loc. cit. (*coarctata*). Smith, Rept. U. S. Fish Commr. for 1871 and 1872 (1871), p. 518; Trans. Conn. Acad., V, p. 43, 1879; Rept. U. S. Fish Commr. for 1882 (1881), p. 317; for 1885 (1887), p. 626. Lockington, Proc. Cal. Acad. Sci., VII, p. 65, 1876. Carrington and Lovett, Zoölogist (3), V, p. 115, 1881. Miers, Challenger Rept., Zoöl., XVII, p. 48, 1886, (*coarctata*), and synonymy. Scott, op. cit., p. 256. Aurivillius, op. cit., p. 46, pl. 1, fig. 6.

Hyas latifrons Stimpson, Proc. Phila. Acad. Nat. Sci., IX, p. 217, 1857. Lockington, op. cit., p. 61. Smith, Trans. Conn. Acad., V, p. 45, 1879. Murdoch, Rept. of Exped. to Point Barrow, Alaska, p. 137, 1885. Aurivillius, op. cit., p. 46, (Greenland).

Stimpson's species *latifrons* is based chiefly on the shorter, broader, less acute rostrum, the closed orbital fissures, and the broader anterior portion of the carapace as compared with *coarctatus*. A large number of specimens from many different localities along the Atlantic and Pacific coasts have been examined and the following observations made: In the specimens 2 inches or more in length from the Atlantic, ranging from Nova Scotia to Greenland and from shallow water to 81 fathoms, the rostral horns are short and blunt and the orbital fissures are closed, or in a few specimens very narrowly open, varying in different individuals from the same locality. The width of the anterior portion of the carapace is from 0.76 to 0.87 of the branchial width. From Bering Sea and the Arctic coast of Alaska vast numbers of large specimens have been obtained by various collectors, including an interesting series from off Bristol Bay collected by the Fish Commission steamer *Albatross* during the summer of 1890. They are not only variable in width, but the orbital fissures, while usually closed, are not uniformly so. The rostral horns are always rather short, broad, and obtuse. The width of the anterior portion of the carapace varies from 0.69 to 0.85 of the branchial width, the narrowest specimens being larger than any that have been obtained from the Atlantic. The two series of large specimens from the Atlantic and Pacific coasts are absolutely indistinguishable, as the minor characters mentioned by Stimpson, the swollen carapace, the number of tubercles, and the obtuseness of the angles, all vary with the individual.

In smaller specimens the orbital fissures are usually open, the rostrum proportionally longer than in larger forms, and the anterior width is greater, varying from 0.86 to 0.92 of the branchial width. The only European specimens which I have at hand are seven from the Shetland Islands and one from Kielerbucht. The former are from 1 to 1½ inches in length, have a very long rostrum, wide orbital fissures, and are of medium width anteriorly. The merus joints of the ambulatory legs are unusually long. This form, which is probably the typical *coarctatus*, we find reproduced in large numbers on the Atlantic coast of

North America, except that the merus joints are rarely as long. Occasional specimens of small size, however, have a shorter rostrum and fissures narrow or almost closed. Small specimens from the Pacific coast, while having, as a rule, the orbital fissures open (this character being present even among Stimpson's types), more often exhibit narrower fissures than do individuals from Europe and Eastern North America. This variation of many of the small Pacific forms from the normal type is of no special significance, as the same variation occurs even on the Atlantic side. Specimens from Greenland, three-fourths of an inch long, with fissures very slightly open, are identical in form with others of the same size from Bering Sea; while it is impossible to separate specimens with open fissures found on Georges Bank from others found north of the Alaskan Peninsula.

Length of largest specimen, 80; greatest width, 64.5; length of cheliped, about 144 millimeters.

The following tables show the comparative width of the anterior and posterior portions of the carapace in various males from the Atlantic and Pacific oceans:

ATLANTIC.

Locality.	Branchial width.	Hepatic width.	Ratio of branchial to hepatic width.
Greenland	48.5	37	1 : .76
Station 2460	48	39	1 : .81
Arichat, Nova Scotia	43.5	37	1 : .85
Labrador	33.5	27	1 : .8
Station 2455	32	28	1 : .87
Shetland	22.5	18.5	1 : .82
Off Cape Cod	19	16.7	1 : .88
Do	19	16.5	1 : .87
Off Georges Bank	17	15.6	1 : .92
Do	16	14	1 : .87
Off Cape Ann	12	10.8	1 : .9
Grand Manan	10.5	9	1 : .86

PACIFIC.

Station 3251	64.5	44.5	1 : .69
Norton Sound	59.3	43	1 : .72
Station 3248	57.3	42	1 : .73
Plover Bay	54	41	1 : .76
Bering Sea (type of *latifrons*)	53.5	44	1 : .82
Plover Bay	37.5	31	1 : .83
Station 3251	36	28.5	1 : .79
Do	29.5	24	1 : .81
Plover Bay	28.3	24	1 : .85
Bering Sea (type of *latifrons*)	27	23	1 : .85
Plover Bay	22	20	1 : .91
Station 3281	18.5	16.5	1 : .89
Station 3288	17	15	1 : .88
Station 3282	15.5	13.5	1 : .87
Bering Strait	15.5	14	1 : .9
Do	13	12	1 : .92

RECORD OF SPECIMENS EXAMINED.

Shetland; A. M. Norman (6319, 9060).

Kielerbucht, Germany; K. Möbius (16286).

U. S. Fish Commission:

Off Chesapeake Bay, 18 to 373 fathoms.

Off Martha's Vineyard, 26 to 158 fathoms.

Off Nantucket Shoals, 18 to 62 fathoms.

Off Georges Bank, 35 to 906 fathoms.

Le Have Bank, 45 fathoms.

Off Cape Cod, Massachusetts, 16 to 90 fathoms.

Massachusetts Bay, 45 to 90 fathoms.

Off Cape Ann, Massachusetts, 7 to 42 fathoms.

Gulf of Maine, 23 to 98 fathoms.

Grand Manan, New Brunswick.

Off Halifax, Nova Scotia.

Arichat Harbor, Cape Breton, Nova Scotia, 30 fathoms, stomach of cod; W. A. Stearns (15289).

Henley Harbor, Labrador, shallow water; W. A. Stearns (5240).

Greenland; Dr. Pavy, Howgate Expedition (5239).

Disco Harbor, Greenland; Ensign H. G. Dresel, U. S. Navy, Greely Relief Expedition (13988).

Lat. 70° 20′ N., long. 56° W., 90 fathoms; Ensign C. S. McClain, U. S. N., U. S. S. *Alert* (13759).

Stations of the U. S. Fish Commission steamer *Albatross*, 1885 and 1886:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.
				Fath.	Temp.	Materials.	
		° ′ ″	° ′ ″		°		
10208	2455	47 21 00	51 38 30	81	30	br. S	June 26
10209	2456	47 29 00	52 18 00	86	.....	G	July 2
10212	2460	45 50 00	54 06 00	67	30	gy. S. Sh	3
10213	2463	45 44 00	54 27 00	45	30	brk. Sh	3
16287	2466	45 29 00	55 24 00	67	30	Co	3
10214	2490	45 27 30	58 27 45	50	.....	G. P	6
10215	2498	44 54 00	59 46 45	65	.....	fine br. S	6
10216	2503	44 22 30	61 00 15	47	35	P	7
10217	2509	44 30 00	63 18 00	43	34.8	crs. S	8
10218	2525	41 49 00	65 49 30	72	43.6	S. G. brk. Sh	13
11872	2692	46 50 00	44 35 00	73	.....	gy. S. sml. bk. St	Aug. 11
11873	2694	46 52 30	44 54 30	86	.....	gy. S. bk. Sp	11

Arctic and Pacific Oceans:

Cat. No.	Locality.	Depth.	Materials.	Collector.
7852	Cape Smyth, Alaska	Beach.	.....	U. S. Signal Service.
7878	10 miles west of Point Franklin	13½	P. S. brk. Sh.	Do.
14730	71° 02′ 00″ N., 157° 46′ 00″ W	19	.....	U. S. R. S. Corwin.
14728	66° 07′ 00″ N., 168° 26′ 37″ W	31	.....	Do.
13590	65° 49′ 15″ N., 169° 04′ 30″ W	26	.....	Do.
14729	Off Point Hope, Alaska	25	.....	Do.
14732	Arctic Ocean	.....	.....	Do.
14738	Off Cape Sabine, Alaska	13	G	W. H. Dall.
14743	66° 45′ 00″ N., 166° 35′ 00″ W	10	S	Do.
14739	Cape Prince of Wales, Alaska	23	M	Do.
14737	Bering Strait	13	G	Do.
14741	12 miles east of Kings Island	17	M	Do.
14740	Plover Bay, Siberia	10–25	.....	Do.
5241	.....do	15–20	.....	Do.
14744	East Cape, Siberia	.....	.....	Dr. R. White.
14735	63° 37′ 00″ N., 165° 19′ 00″ W	12	.....	Lieut. George M. Stoney, U. S. Navy.
14734	62° 54′ 00″ N., 166° 38′ 00″ W	22	.....	Do.
14733	69° 22′ 00″ N., 168° 45′ 00″ W	.....	.....	Do.
2100	Bering Sea (types of *latifrons*)	.....	.....	North Pacific Exploring Expedition.

Bering Sea; U. S. Fish Commission Steamer *Albatross*, 1890 and 1891:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		° ′ ″	° ′ ″		°			
15870	3246	58 26 30	161 36 00	17½	38	G	June 9	
15871	3248	58 31 15	162 22 00	21	43	fne. gy. S. G	13	
15872	3259	58 11 30	163 02 15	17½	46.2	gy. S	13	
15873	3251	57 35 50	164 05 00	25½	37.5	fne. gy. S	14	Abundant.
15874	3252	57 22 20	164 24 40	29½	41.8	bk. M	14	
15875	3253	57 05 50	164 27 15	36	35	M. S	14	
15876	3278	56 12 30	162 13 00	47	38.8	fne. gy. S	28	Do.
15877	3279	56 25 40	162 39 15	41	37	fne. gy. S	28	
15878	3280	56 27 00	162 08 00	36	41	fne. gy. S	28	
15879	3281	56 14 00	161 41 15	36	.....	gy. S. bk. Sp	28	
15880	3282	56 30 45	161 50 15	53	38.2	fne. S. gn. M	29	Do.
15881	3283	56 28 00	161 16 30	39	40.3	fne. gy. S	29	
15882	3281	56 16 30	160 53 00	25	43	fne. G	29	
15883	3286	56 39 30	160 29 00	37	41 5	fne. gy. S. Sh. Gr	July 17	Do.
15884	3288	56 26 30	160 00 00	15	45.5	bk. G	17	Do.
15885	3291	56 58 30	159 11 00	26	41.2	bk. S. G	18	
15886	3292	57 14 00	159 35 00	32	.....	bk. S. G	18	
15887	3293	57 30 00	159 33 00	30	40	fne. gy. S	18	
15888	3294	57 16 45	159 03 30	30	41	bk. G	18	
15889	3297	57 38 00	159 07 30	26	41.5	gy. S	19	
15890	3302	57 45 45	160 12 15	30	40.2	fne. gy. S	21	
15891	3303	57 27 00	160 23 30	33	39.5	bk. S	21	Do.
15893	3304	58 02 30	161 13 45	28	.....	fne. gy. S	21	
15892	3305	57 51 30	161 40 00	23	41.8	fne. gy. S	22	
15894	3306	57 24 30	164 17 00	33	38.9	fne. gy. S	22	Do.
17077	3438	57 06 30	170 22 30	20	.....	fne. gy. S. Sh	Aug. 3	
17078	3439	57 06 00	170 35 00	41	44	fne. bk. S	3	

Hyas lyratus Dana.

Plate III.

Amer. Jour. Sci. (2), XI, p. 268, 1851; Crust. U. S. Expl. Exped, I, p. 86, pl. I, fig. 1, 1852. Stimpson, Jour. Boston Soc. Nat. Hist., VI, p. 450, 1857. Lockington, Proc. Cal. Acad. Sci., VII, p. 61, 1876. Miers, Challenger Rept., Zoöl., XVII, p. 47, 1886.

Large specimens of this species show characteristics somewhat different from the example figured by Dana. The carapace is very broad posteriorly, strongly tuberculate. The tubercle at the middle of the posterior margin is large and rounded. There is a subacute tubercle on the posterior margin of the wing-like expansion. The tubercle at the antero-external angle of the basal antennal joint is large, smooth, and constricted at base. Chelipeds long and strong; merus and carpus tuberculate; merus with a ridge of large, irregular tubercles above; hand slightly compressed, roughly granulate, ridged above. Ambulatory legs, slightly pubescent except the dactyls, which are densely so.

Dimensions of three largest males.

Cat. No.	Length.	Branchial width.	Hepatic width.	Length of cheliped, about	Length of first ambulatory leg, about —	Length of fourth ambulatory leg, about —
5872	105	80	61	260	189	134
5243	100	78	65	200	189	132
15922	85	67	49.5	159	129	99

The collection in the Museum ranges from the extreme end of the Aleutian Islands eastward and southward to Puget Sound. Stimpson

says this species "inhabits deep water on the coast of Oregon, where it was found by the United States Exploring Expedition." Dana, on the contrary, in describing the Crustacea from that expedition, records this species only from Puget Sound.

RECORD OF SPECIMENS EXAMINED.

Cat. No.	Locality.	Fathoms.	Materials.	Collector.	Remarks.
14720	Chichagoff Harbor, Attu	5-7	S. G	W. H. Dall	
14721	Kyska Harbor	7-14	S	do	
14726	Constantine Harbor, Amchitka	6-10	S. St	do	
14767	Bay of Islands, Adakh	9-16	S. M	do	
14722	Captains Harbor, Unalaska	25-75	crs. S	do	Abundant.
14724	Belkofsky Bay	15-25	Sh. Gr	do	
12504	Port Levasheff			do	
14718	Coal Harbor, Unga	6-9	S. St. M	do	Do.
14727	Chajafka Cove, Kadiak	12-14	S. M	do	Do.
14719	Off Marmot Island			do	
12510	Kachekmak Bay, Cook's Inlet	20-60	sdy. M	do	
14725	Port Etches	5-18	G. St	do	Do.
14766	Sitka Harbor	15	G. M	do	
5213	Wrangel			Dr. W. H. Jones, U. S. Navy.	
14811	Nakat Harbor			Lieut. Commander H. E. Nichols, U. S. Navy.	
5872	Port Wrangel			do	
16279	Steamer Bay			do	
5777	Menzies Bay, Discovery Passage, B. C	6	soft	do	
15798	Victoria, B. C			Dr. C. F. Newcombe.	
15539	Kadiak, Alaska			U. S. Fish Commission.	
15541	Port Townsend, Wash			do	

Stations of the U. S. Fish Commission steamer *Albatross*, 1888 and 1890:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		′ ″	° ′ ″		°			
15531	2841	54 18 00	165 55 00	56	41	P	July 23	
15533	2842	54 15 00	166 03 00	72	41	P	23	Abundant.
15532	2843	53 56 00	165 56 00	45	43.5	brk. Sh. P	28	
15537	2844	53 56 00	165 40 00	54	42	gy. S	28	
15512	2847	55 01 00	160 12 00	48	42	fne. gy. S	31	
15534	2848	55 10 00	160 18 00	110	41	gn. M	31	
15535	2849	55 16 00	160 28 00	69	43	gn. M	Aug. 2	
15543	2851	54 55 00	159 52 00	35	44.8	gy. S. brk. Sh	4	
15538	2852	55 15 00	159 37 00	58	41.8	bk. S	4	
15510	2854	56 55 00	153 04 00	60	42.8	bk. S	10	
15896	2855	57 00 00	153 18 00	69	44	gn. M	10	
15536	2856	58 07 00	151 36 00	68	44	gy. S. bk. sp	Aug. 22	
15897	2857	58 05 00	150 46 00	51	44.6	brk. Sh. gy. S	22	
15898	3213	54 10 00	162 57 30	41		bk. S	May 21	Do.
15899	3216	54 20 30	163 37 00	61		bk. S. M	21	
15900	3219	54 14 00	164 35 00	59	38	bk. S. G	22	
15901	3220	54 15 00	165 06 00	34		G. brk. Sh	22	
15902	3222	54 20 00	165 30 00	50	39.7	bk. S. P. Sh	22	Do.
15903	3223	54 26 15	165 32 00	56	39	bk. P	22	
15901	3231	58 35 00	157 28 50	12		S	June 2	
15905	3232	58 31 30	157 34 15	10½		P. St	2	
15906	3233	58 23 45	157 42 45	7½	41.5	S. P	2	
15907	3235	58 16 30	158 13 00	11		bk. S	7	
15908	3236	58 11 00	158 05 30	14½	39	G. S. Sh	7	
15509	3241	58 38 30	159 33 30	11	38	bk. M	8	
15910	3257	54 49 00	165 32 00	81	39	gy. S. G	24	
15911	3258	54 48 00	165 13 30	70	39	bk S. G	24	
15912	3259	54 40 50	165 05 30	41	40.6	bk. S. G	24	
15913	3267	55 23 30	163 29 00	32	41	bk. S	25	
15914	3272	55 31 40	163 07 00	31	42	bk. rd. S	27	
15915	3277	55 58 45	161 46 30	18	43.2	G. S. R	28	
15916	3278	56 12 30	162 13 00	17	38.8	fne. gy. S	28	
15917	3279	56 25 40	162 39 15	41	37	fne. gy. S	28	
15918	3280	56 27 00	162 08 00	36	41	fne. gy. S	28	

Stations of the U. S. Fish Commission steamer *Albatross*, 1888 and 1890—Continued.

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		° ′ ″	° ′ ″					
15919	3281	56 14 00	161 41 15	36	.....	gy. S, bk. sp.....	June 28	
15920	3282	56 30 45	161 50 15	53	38.2	fine. S. gn. M	29	
15921	3283	56 28 00	161 16 50	39	40.3	fine. gy. S	29	
15922	3284	56 16 30	160 53 00	25	43	fine G.....	29	Abundant.
15923	3286	56 39 30	160 29 00	37	41.5	fine. gy. S. Sh. G....	July 17	
15924	3288	56 26 30	160 00 00	15	45.5	bk. G	17	
15925	3291	56 58 30	159 11 00	26	41.2	bk. S. G.....	18	
15926	3292	57 14 00	159 35 00	32	.....	bk. S. G.....	18	
15927	3293	57 30 00	159 33 00	30	40	fine. gy. S	18	
15928	3294	57 16 45	159 03 30	30	41	bk. G	18	
15929	3296	57 26 30	158 46 00	24	43	gy. S. bk. Sp	19	
15930	3300	58 12 30	159 55 00	15	42.2	P.....	20	
15931	3301	58 12 45	160 37 30	17	.....	fine. gy. S	20	
15938	3302	57 45 45	160 12 15	30	40.2	fine. gy. S	21	
15932	3306	57 24 30	161 17 05	33	38.9	fine. gy. S	22	
15933	3311	53 59 36	166 29 13	85	41	gn. M.....	Aug. 15	
15934	3313	54 01 51	166 27 38	68	42.7	fine. bk. S	15	
15935	3319	53 40 30	167 30 00	59	40.8	bk. S	18	
15936	3320	53 40 00	167 29 45	59	10.8	bk. S. Co.....	18	
15937	3335	53 58 05	166 33 25	93	40.8	M	22	

Chionœcetes opilio (O. Fabricius).

Pl. IV, Figs. 5–7.

Cancer Phalangium O. Fabricius, (Fauna Grœnl., p. 234, 1780).

Cancer opilio O. Fabricius (Kongelige Danske Vid. Selsk. Skr. nye Saml., III, 181, plate, 1788).

Chionœcetes opilio Kröyer, Natur. Tidskrift (1), 2, p. 249, 1838 (in Gaimard, Voyages en Scandinavie, etc., Crust., pl. 1, 1839). Dana, Crust. U. S. Expl. Exped., I, p. 78, 1852. Miers, Jour. Linn. Soc. London, XIV, p. 654, 1879. Smith, Trans. Conn. Acad., V, p. 11, 1879, and synonymy. Murdoch, Rept. of the International Polar Expedition to Point Barrow, Alaska, p. 137, 1885, and synonymy. Aurivillius, K. Sv. Vet.-Akad. Hand., 23, 1, p. 46, 1889.

Chionœcetes behringianus Stimpson, Proc. Boston Soc. Nat. Hist., VI, p. 84, 1857; Jour. Boston Soc. Nat. Hist., VI, p. 449, 1857; Proc. Acad. Nat. Sci. Phila., IX, p. 217, 1857. Lockington, Proc. Cal. Acad. Sci., VI, p. 61, 1876.

Peloplastus Pallasii Gerstaecker, Archiv für Natur., XXII, 1, p. 105, pl. 1, fig. 1, 1856 (April, 1857).

This well known species is represented in the collection by a large series ranging from the fishing banks off Newfoundland northward to Greenland, and from the Arctic coast of Alaska southward through Bering Strait and along the eastern and western shores of Bering Sea to the Aleutian Islands, where it is found in abundance, and thence eastward and southward along the Alaskan coast to British Columbia. It ranges in depth from shallow water to 206 fathoms on the Atlantic coast and 121 fathoms on the Pacific. In many of the lots collected by the steamer *Albatross* along the Alaskan peninsula the spines of the ambulatory legs are sharper than in typical specimens. This is, however, the only difference observed.

The largest specimen is from southeastern Alaska (16292) and has a span of 2⅔ feet with the following dimensions: Length, 127; width, 135; length of cheliped, about 256; length of first ambulatory leg, about 340 millimeters.

Prof. S. I. Smith records this species on the Atlantic coast as far south as off Casco Bay, Maine.

RECORD OF SPECIMENS EXAMINED.

Fishing banks off Newfoundland; U. S. Fish Commission steamer *Albatross*, 1885 and 1886:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom. Fath.	Bottom. Temp.	Bottom. Materials.	Date.
		° ′ ″	° ′ ″		°		
10207	2453	47 10 00	51 02 00	82	29.7	gn. M. fne. S	June 26
10206	2457	47 13 00	52 21 00	86	29.5	gy. S	July 2
10204	2459	46 23 00	52 15 00	88	29.5	crs. gy. S	2
10205	2461	45 47 00	54 13 30	59	30	fne. S. bk. Sp	3
11874	2697	47 40 00	47 35 30	236	.....	gn. M. bk. Sp	Aug. 12

Greenland to Bering Sea and British Columbia:

Cat. No.	Locality.	Fathoms.	Materials.	Collector.
13770	Godhavn, Greenland	.....	.....	Ensign C. S. McClain, U. S. N.
13784	? Greenland	.....	.....	Do.
9231	Waigatt Channel, N. Greenland	.....	.....	
16308	Greenland	.....	.....	Copenhagen Museum.
7879	10 miles west of Pt. Franklin, Alaska	13½	S	U. S. Signal Service.
14699	Arctic Ocean	.....	.....	U. S. R. S. Corwin.
14697	? Arctic Ocean	.....	.....	Do.
14700	Off Point Hope, Alaska	25	.....	Do.
14698	66° 30′ to 52′ N., 167° 14′ to 168° 08′ W.	19–30	.....	Do.
14696	65° 25′ to 28′ N., 171° 11′ to 26′ W	6½–11	.....	Do.
2031	Bering Strait (types of *behringianus*)	.....	.....	North Pacific Expl. Exped.
14694	66° 12′ N., 168° 54′ W	.....	.....	Lieut. Geo. M. Stoney, U. S. N.
14701	63° 37′ N., 165° 19′ W	12	.....	Do.
14695	60° 22′ N., 168° 45′ W	.....	.....	Do.
14680	Mouth of Port Clarence, Bering Strait	7–12	.....	W. H. Dall.
14683	Port Providence, Siberia	8–20	M	Do.
14684	Kyska Harbor, Alaska	9–12	sdy. M	Do.
13114	Bay of Islands, Adakh	9–16	S. M	Do.
14776	Nazan Bay, Atka	10–16	S	Do.
13140	Captains Bay, Unalaska	Beach	Sh., etc	Do.
14689	Eider Village anchorage, Captains Bay	.....	.....	Do.
14675	Captains Harbor	9–16	.....	Do.
13123	Captains Har., bet. S. Flat and W. Hd.	20	S	Do.
14685	Captains Harbor, inside of ridge	60–80	S. St	Do.
13133	Captains Harbor, ridge	80	S	Do.
14692	Captains Harbor, outside of ridge	25–75	crs. S	Do.
14774	Hiuliuk Harbor, Unalaska	10	Shingle	Do.
13113	Hiuliuk	10–12	M. St	Do.
13119	Hiuliuk, off village	15	gy. S	Do.
14773	Port Levasheff, Unalaska	20–30	M. Sh	Do.
13138	Between Pinnacle and Ulakhla	16	.....	Do.
3512	Unalaska	Beach	.....	Do.
14679	Coal Harbor, Unga	.....	.....	Do.
14686	....do	3	Shingle	Do.
14682	....do	8–9	S. St	Do.
14681	Off Round Island, Coal Harbor	6–8	M	Do.
14687	Popoff Strait, Shumagins	.....	.....	Do.
14674	Sanborn Harbor, Nagai	Shoal water	Under stones	Do.
13121	Chiachi Islands	20	M	Do.
13128	Chignik Bay	7–18	S	Do.
12526	Chajafka Cove, Kadiak	15–20	G	Do.
14677	Chajafka Cove, Kadiak	12–14	M. S	Do.
14688	Kachekmak Bay, Cooks Inlet	20–60	sdy. M	Do.
14691	Port Etches	12–18	.....	Do.
14775	Port Mulgrave, Yakutat Bay	6–40	.....	Do.
14772	Sitka Harbor	15	G. M	Do.
15473	Kadiak	.....	.....	U. S. Fish Commission.
5795	Wrangel	.....	.....	Dr. W. H. Jones, U. S. N.
16292	Southeastern Alaska	.....	.....	
9353	Wrangel	.....	.....	Lieut. Comdr. H. E. Nichols, U. S. N.
5862	British Columbia	.....	.....	Do.

Alaska; U. S. Fish Commission steamer *Albatross*, 1888, 1890, and 1891:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.		Remarks.
				Fathoms.	Temp.	Materials.			
15472	H. 1166	54 00 00	163 45 00	45	41.7	fne. gy. S.	July	22	Stomach of cod.
15471	2844	53 56 00	165 40 00	54	42	gy. S.		28	
15475	2847	55 01 00	160 12 00	48	42	fne. gy. S.		31	
15467	2848	55 10 00	160 18 00	110	41	gn. M.		31	Abundant.
15469	2849	55 16 00	160 28 00	69	43	gn. M.	Aug.	2	
15476	2851	54 55 00	159 52 00	35	41.8	gy. S. brk. Sh.		4	
15470	2852	55 15 00	159 37 00	58	41.8	bk. S. M.		4	
15468	2855	57 00 00	153 18 00	69	44	gn. M.		10	
15826	3216	54 20 30	163 37 00	61	.....	bk. S. M.	May	21	Very abundant.
15827	3219	54 14 00	164 35 00	59	38	bk. S. G.		22	
15828	3224	54 42 50	165 37 00	121	38.7	bk. S. G.		22	
15829	3225	54 48 30	165 49 00	85	38.6	bk. S.		22	Abundant.
15830	3251	57 35 50	164 05 00	25½	37.5	fne. gy. S.	June	14	Do.
15831	3252	57 22 20	164 24 40	29½	44.8	bk. M.		14	Very abundant.
15832	3253	57 05 50	164 27 15	56	35	m. S.		14	Do.
15833	3255	56 33 30	164 31 40	43	37	gn. M. S.		14	Abundant.
15859	3256	56 18 00	164 34 10	49	35	gn. M. brk. Sh.		14	Do.
15834	3257	54 49 00	165 32 00	81	39	gy. S. G.		24	Do.
15835	3258	54 48 00	165 13 30	70	39	bk. S. G.		24	
15836	3259	54 40 50	165 05 30	41	40.6	bk. S. G.		24	
15837	3263	55 04 00	165 04 00	61	39.5	bk. M.		24	Do.
15838	3272	55 31 40	163 07 00	31	42	bk. rd. S.		27	
15839	3278	56 12 30	162 13 00	47	38.8	fne. gy. S.		28	
15840	3279	56 25 40	162 39 15	41	37	fne. gy. S.		28	
15841	3280	56 27 00	162 08 00	36	41	fne. gy. S.		28	
15842	3281	56 14 00	161 41 15	36	.....	gy. S. bk. Sp.		28	
15843	3282	56 30 45	161 50 15	53	38.2	fne. S. gn. M.		29	Very abundant.
15844	3286	56 39 30	160 29 00	37	41.5	fne. gy. S. Sh. G.	July	17	
15845	3288	56 26 30	160 00 00	15	45.5	bk. G.		17	
15846	3306	57 24 30	161 17 00	33	38.9	fne. gy. S.		22	
15847	3309	56 56 00	172 55 00	71	37.9	gn. M.	Aug.	4	
15848	3310	53 56 51	166 28 53	58	41.5	fne. dk. S. M.		15	
15849	3311	53 59 36	166 29 43	85	41	gn. M.		15	Do.
15850	3312	53 59 11	166 25 09	45	43	fne. S. M.		15	
15851	3313	54 01 51	166 27 38	68	42.7	fne. bk. S.		15	Abundant.
15852	3321	53 33 30	167 15 40	54	41.5	dk. M.		18	
15853	3333	53 53 35	166 30 15	19	43.9	gn. M.		22	Very abundant.
15854	3334	53 56 20	166 29 15	50	42.6	M. S.		22	
17073	3438	57 06 30	170 22 30	20	.....	fne. gy. S. Sh.	Aug.	3	
17074	3439	57 06 00	170 35 00	41	44	fne. bk. S.		3	Abundant.
17075	3440	57 05 00	170 41 00	48	.....	bk. M. Sh.		3	
17076	3441	57 04 20	170 52 30	51	39	bk. M. Sh.		3	
17097	3442	57 10 00	170 47 15	47	40	bk. M. Sh.		3	

Chionœcetes tanneri, sp. nov.

Plate IV, Figs. 1-1.

There exists in the deeper waters on the Pacific coast of North America from Bering Sea to the southern extremity of California a species of *Chionœcetes* closely allied to *opilio*, but possessing striking differences.

The carapace is much swollen at the branchial regions, which are distended both vertically and laterally, concealing the lateral margin of the carapace. Between the two branchial regions along the median line there is a deep, narrow, triangular depression which widens out anteriorly and joins the depressions between the gastric and branchial regions. The carapace is covered with spines instead of granules or tubercles. The most conspicuous spines on the carapace are arranged in irregular rows, one of which extends transversely across the anterior part of the gastric region; a second row extends from behind the orbits diagonally backward across the branchial region; a third row extends from near the inner angle of the branchial region almost transversely

to the outer margin, from which point a row of long spines extends forward along the lateral margin and is continued on the pterygostomian regions. This marginal row of long spines, while forming the apparent lateral margin, really overhangs and conceals the real margin. This is a conspicuous difference between this species and *opilio*, in which the branchial region is flattened out so that the postero-lateral margin is visible in a dorsal view to a point just back of the cheliped. From the lateral row of long spines a small row of three or four spines extends up on the carapace near the anterior part of the branchial region. Small, sharp spines border the orbits, the outer margin of the postocular teeth and the infero-lateral and posterior margins.

The rostral horns are longer and narrower than in *opilio*, leaving a widely V-shaped notch between.

The second segment of the abdomen of the male is bent downward at the extremities in almost a right angle. There is a transverse ridge of spiny tubercles on the sternum in front of the abdomen. Anterior to this ridge the sternum is deeply excavated.

The posterior margin of the epistome is strongly deflexed in the center and arched at the sides. The external maxillipeds when in place do not fit closely into the buccal cavity as in *opilio*; merus joints strongly spinose on the margins. On removing the carapace from specimens of *tanneri* and *opilio* of equal size, the gills in the former are seen to be much larger than in the latter, being about two-fifths longer in *tanneri*. There are corresponding differences in the maxillipeds. The scaphognathite of the second maxilla is very much larger (pl. IV, figs. 2 and 5), and also the endopodite of the first maxilliped (figs. 3 and 6). The foliaceous part of the flabellum has about twice the area of the same in *opilio* (figs. 4 and 7).

The legs are armed with spines longer and stouter than those of *opilio*. In adult specimens the ambulatory legs are longer than in *opilio*, especially the merus joints, which are much narrower and in the males do not widen out at the proximal end as in *opilio*. The ambulatory legs of the female are shorter than those of the male, as is the case in *opilio*. In comparing young specimens of both species the difference in the length of the ambulatory legs and in the width of the merus joints is not evident.

The specimen figured is a very large one, in which the spines are more worn and blunt than in medium-sized specimens.

Table of measurements.

Chionœcetes tanneri.							*Chionœcetes opilio.*						
Station.	Sex.	Length, from base of rostral horns.	Width, without spines.	Approximate length of first ambulatory leg.	Length of merus of first ambulatory leg.	Greatest width of merus of first ambulatory leg.	Station.	Sex.	Length, from base of rostral horns.	Width, without spines.	Approximate length of first ambulatory leg.	Length of merus of first ambulatory leg.	Greatest width of merus of first ambulatory leg.
		mm.	*mm.*	*mm.*	*mm.*	*mm.*			*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
3100	♂	119	130	316	134	18.5	3252	♂♂♀♀	100	117.5	247	99	22
3307	♂	105	111	321	133	19	3253	♂♂♀♀	94	99	226	90	20
2923 }	♂	73.5	80	177	72	10.5	2453	♂♂♀♀	89	91	220	90	17.5
2980 }							3263	♂♂♀♀	75	78	183	74	16
2923 }	♂	72.5	77	187	76	10	3256	♂♂♀♀	69	71	164	68	15
2980 }							2848	♂♂♀♀	67	77.5	166	67	14
2980	♂	67.5	71.5	153	63	8	3310	♂♂♀♀	67	79	172	72	14
2871	♂	48	50	116	47	7	3216	♂♂♀♀	56	65	125	48.5	11.5
3342	♂♂♀♀	32	32	82	32	4.7	3311	♂♂♀♀	32	35	76	29	5.5
2928	♂♂♀♀	31	32.5	73	29	4	3256	♂♀	80	91	150	60	16.5
2925	♂♀	88	95	206	84	14	3263	♂♀	79	90	150	58	16
3186	♂♀	87	94	190	77	15	3216	♂♀	65	74	142	53	13
3188	♀	80	86	171	68	12.5	3310	♂♀	56	61	129	51	11
2923 }	♀	73.5	76	148	58	9	3311	♀	30.5	31	69.5	27	5.3
2980 }													
2870	♀	70.5	77	180.5	70.5	12.5							
3307	♂♀	69	74	162	64	13							
3342	♂♀	31	32	77	30	5							

RECORD OF SPECIMENS EXAMINED.

Bering Sea to southern California; U. S. Fish Commission steamer *Albatross*, 1888–1890 (stations arranged from north to south):

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		° ′ ″	° ′ ″		°			
15862	3308	56 12 00	172 07 00	1625	35	gn. Oz	Aug. 4	Abundant.
15863	3340	55 26 00	155 26 00	695	36.8	M	29	
15861	3307	53 55 00	170 50 00	1033	35.4	gn. Oz	3	
15864	3342	52 39 30	132 38 00	1588	35.3	gy. Oz. crs. S	Sept. 3	Do.
15478	2860	51 23 00	130 34 00	876	36.5	gn. M	Aug. 31	Do.
15488	3073	47 28 00	125 15 00	477	49.2	gn. M	June 28	Do.
15865	3344	47 20 00	125 07 00	831	36.8	gn. M	Sept. 21	
15485	2871	46 55 00	125 11 00	559	38.4	br. Oz	23	
15474	2870	46 44 00	124 32 00	58	46.5	rky	23	
15866	3346	45 30 00	124 52 00	786	37.3	gn. M	22	
15867	3348	39 02 10	124 06 15	455	47.6	fne. gy. S	25	
15868	3349	38 57 45	124 03 05	239	44.1	bk. S	25	
15860	3100	37 43 20	122 43 00	29	50.4	crs. G	Mar. 10	
15489	3104	37 23 00	123 08 00	391	40.8	C	11	Do.
15493	3112	37 08 00	122 47 00	296	41.8	fne. gy. S	12	
15491	3186	36 18 50	122 06 00	328	41.3	bk. S. M	Apr. 3	
15492	3188	36 08 15	121 49 40	316	45	gn. M	3	
15483	2892	34 15 00	120 36 00	284	44.1	yl. M	Jan. 5	
15477	2980	33 49 45	119 24 30	603	38.9	gn. M	Feb. 12	
15482	2937	33 04 30	117 42 00	464	46.5	gn. M	4	
15481	2928	32 47 30	118 10 00	417	41	bk. S. G	Jan. 23	
15484	2923	32 4[illegible] 30	117 31 30	822	39	gn. M	19	Do.
15486	2923 / 2980							Do.
15487	2925	32 32 30	117 24 00	339	42.9	M	19	
15480	2929	32 27 30	117 26 30	623		gn. M	26	
15479	2919	32 17 00	119 17 00	984	38	gy. M	17	

Herbstia condyliata (Herbst).

Cancer condyliatus Herbst, Natur. der Krabben und Krebse, I, p. 246, pl. XVIII, figs. 99 A, B, 1790.

Herbstia condyliata Milne Edwards, Hist. Nat. Crust., I, p. 302, pl. XIV bis, fig. 6, 1834, and synonymy. Miers, Jour. Linn. Soc. London, XIV, p. 655, 1879; Challenger Rept. Zoöl., XVII, p. 49, 1886. Aurivillius, K. Sv. Vet.-Akad. Hand., Bd. 23, I, p. 47, 1889.

Naples, Italy; A. M. Norman (14509).

This Mediterranean species has also been recorded from the Canaries and Azores.

Herbstia (Herbstiella) camptacantha (Stimpson).

Herbstia parvifrons Stimpson, Ann. Lyc. Nat. Hist. N. Y., VII, p. 185, 1860 (not Randall).

Herbstiella camptacantha Stimpson, op. cit., X, p. 94, 1871.

Herbstia camptacantha A. Milne Edwards, Miss. Sci. au Mexique, pt. 5, I, p. 78, pl. XVIII, fig. 3, 1875.

Mithrax? armatus Lockington, Proc. Cal. Acad. Sci., VII, p. 70, 1876.

Herbstia (Herbstiella) camptacantha Miers, Jour. Linn. Soc. London, XIV, p. 655, 1879; Challenger Rept., Zoöl., XVIII, p. 49, 1886.

The specimens agree very well with Stimpson's description, except that instead of the blunt tooth near the base of the dactyl the edge is minutely serrulate along the gape.

The largest specimen is 13.5 millimeters long and 11 wide.

RECORD OF SPECIMENS EXAMINED.

Catalina Harbor, Cal.; beach (16320); 30 to 40 fathoms, sandy mud (16321); W. H. Dall.

Southern California; W. H. Dall (16322).

San Diego, Cal.; C. R. Orcutt (16323).

Off Magdalena Bay, Lower Cal.; U. S. Fish Commission, 1889:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Sex.
				Fath.	Temp.	Materials.		
		° ′ ″	° ′ ″		°			
16316	2988	24 58 30	115 52 30	34	63.9	Coralline	Mar. 2	1 ♀ with eggs.
16315	2989	24 58 15	115 53 00	36	64.3	Coralline	2	1 ♂

Previously recorded from Acapulco, Mazatlan, and Cape Saint Lucas.

Cœlocerus grandis, sp. nov.

Plate V.

The carapace is oval-orbicular, very convex, armed with many stout, blunt spines, between the spines smooth, finely punctate; regions distinct. There are six spines on the median line, two on the gastric, one on the genital, two on the cardiac, and one on the intestinal region. There is an additional spine on the gastric region on either side and in advance of the first median spine. There is one spine on the upper

surface of the hepatic region and seven on each branchial region, arranged as follows: Two large, widely separated, in a line with the posterior margin of the gastric region; two near the cardiac region arranged almost longitudinally; two forming almost a parallelogram with the latter; and one near the posterior margin. There are five lateral spines, decreasing in size from the large, strong hepatic spine to the last one on the branchial region. On the right side there is an additional small spine above the last lateral spine.

Rostrum broad, upturned; margin thick, involuted. In the specimen in hand, the end of the rostrum is broken off, as are also the flagella of the antennæ. Præocular tooth prominent. Upper orbital fissure closed at its anterior end. Postocular angle dilated outwardly in a stout tooth. Basal antennal joint thick, broadest posteriorly, bearing two teeth on the orbit and two teeth below these, of which the posterior one points downward, outward, and forward, and the anterior one, situated at the antero-exterior angle is very stout, rounded at the end, and projects horizontally forward and slightly inward. In a line with these last two teeth is one below the postocular tooth, pointing downward and another at the angle of the buccal cavity. There are two spines on the subhepatic region, arranged almost longitudinally.

Abdomen of female with a broad carina through the center, a median spine on the first and second segments, and a broad median tubercle on the third. At each end of the second segment there is a broad tubercle, the distal half of which is flattened horizontally.

Chelipeds of the female not so long as the first pair of ambulatory legs. Merus subcylindrical with two or three small spines on the upper surface. Carpus with two or three spiny tubercles. Palms compressed, about twice as long as broad, tapering slightly toward the distal end. Fingers evenly dentate, almost meeting when closed. Ambulatory legs stout, decreasing regularly in length, unarmed except for a tubercle at the upper distal end of the meral joints.

The maxillipeds, lower edge of the carapace, margins of the sternum and abdomen, and especially the anterior portion of the sternum are fringed with long hair. Legs hairy, except the distal two-thirds of the dactyls.

Length of carapace, without rostrum, 98; width, without spines, 87; length of cheliped about 104 millimeters.

One specimen collected by the U. S. Fish Commission steamer *Albatross*, in the Gulf of Mexico, lat. 29° 34′ 30″ N., long. 88° 01′ W., 35 fathoms, yellow sand, black specks, station 2388, March 4, 1885 (9694).

Maia squinado (Herbst).

Cancer squinado Herbst, Natur. der Krabben und Krebse, III, part 3, p. 23, pl. LVI, 1803.

Maia squinado Latreille (Hist. Nat. Crust., VI, p. 93; Ency., pl. CCLXXVII, figs. 1 and 2). Milne Edwards, Hist. Nat. Crust., I, p. 327, 1834, and synonymy. Bell, Brit. Crust., p. 39, fig., 1853. Miers, Jour. Linn. Soc. London, XIV, p. 655, pl. XII, figs. 7, 8, 1879. Carrington and Lovett, Zoölogist (3), V, p. 116, 1881.

RECORD OF SPECIMENS EXAMINED.

Cornwall, England; A. M. Norman (15337).
Channel Islands; Edward Lovett (6548).
Jersey; A. M. Norman (6773, 6774).
Greece (11484)..
Locality unknown (15371).

Maia verrucosa Milne Edwards.

Cancer squinado Herbst, op. cit., I, p. 214 (pars), pl. XIV, figs, 84, 85, 1790.
Maia squinado Bosc, (Hist. Nat. Crust., t. I, pl. VII, fig. 3?). Audouin, (Crust. de l'Egypte, par M. Savigny, pl. VI, fig. 1).
Maia verrucosa Milne Edwards, Hist. Nat. Crust., I, p. 328, pl. III, 1834. White, Crust. Brit. Mus., p. 8, 1847. Capello, Jor. Sci. Lisboa, p. (2), 1873. Aurivillius, K. Sv. Vet.-Akad. Haud., Bd. 23, 1, p. 47, pl. IV, fig. 2, 1889.

Two male specimens of this Mediterranean species are contained in the collection, with the exact locality unknown; received from Henry A. Ward (16281).

Paramithrax peronii Milne Edwards.

Hist. Nat. Crust., I, p. 324, 1834. White, op. cit., p. 7. Jacquinot et Lucas, Voy. au Pole Sud, Zoöl., III, Crust., p. 10, pl. I, fig. 3, 1853. Miers, Ann. Nat. Hist., (4), XVII, p. 219, 1876; Jour. Linn. Soc. London, XIV, p. 656, 1879. Haswell, Proc. Linn. Soc., N. S. Wales, IV, p. 440, 1879; Ann. Mag. Nat. Hist. (5), V, p. 146, 1880; Cat. Austral. Crust., p. 13, 1882. Filhol, Bull. Soc. Philom., IX, p. 26, 1885. Aurivillius, K. Sv. Vet.-Akad. Haud., Bd. 23, 1, p. 48, pl. IV, fig. 3, 1889.

Bluff Harbor, New Zealand; three males (16277). New Zealand; Otago Museum, one male (16284).
Found also in Australia.

Paramithrax edwardsii (de Haan).

Maja (*Paramithrax*) *edwardsii* de Haan, Fauna Japonica, p. 92, pl. XXI, fig. 2, 1839.
Paramithrax edwardsii Adams and White, Voy. Samarang, p. 11, 1848.
Paramithrax (*Leptomithrax*) *edwardsii* Miers, Ann. Nat. Hist. (4), XVII, p. 220, 1876.

Japan; H. Loomis; two males (16272).

Miers places this species in the subgenus *Leptomithrax*. The chelipeds, however, are not greatly elongated nor the palm subcylindrical. The carpus is similar in shape to those of *peronii* and *latreillei*, has two ridges, and is spinulous. In the larger specimen the fingers meet along their inner edges when closed; in a specimen about one and a half inches long, they are gaping at base, with a tooth on the dactyl. Our specimens of *longimanus* and *australis* have fingers gaping at base. This, therefore, can not constitute a subgeneric character. *Edwardsii* is allied also by the form of its carapace to the subgenus *Paramithrax*, in which the caparace is oblong ovate, while in *Leptomithrax* the carapace is triangular-ovate. In *edwardsii* the eyes reach the postocular spine, as in *Leptomithrax*.

Paramithrax latreillei Miers.

Paramithrax barbicornis Miers (not Latreille), Ann. Mag. Nat. Hist., (4), XVII, p. 219, 1876 (Cat. Crust. N. Z., p. 6, pl. 1, fig. 2, 1876); Ann. Mag. Nat. Hist., (5), IV, p. 8, 1879. Haswell, Proc. Linn. Soc. N. S. W., IV, p. 440, 1879; Ann. Mag. Nat. Hist., (5), V, p. 146, 1880; Cat. Austral. Crust., p. 13, 1882.

Paramithrax latreillei Miers, Ann. Mag. Nat. Hist., (4), XVII, p. 220, 1876.

Paramithrax cristatus Filhol, Bull. Soc. Philom., IX, p. 26, 1885; (Rec. Venus, III, Abth. 2, p. 358, 1886).

Filhol (Bull. Soc. Philom.) shows that the specimens which in 1876 Miers referred to *barbicornis* are not identical with that species, and proposes for them the name *cristatus*, apparently not aware that Miers, in his preliminary description (Ann. Mag. Nat. Hist. (4), XVII, p. 219, 1876), designates the species as *latreillei*, if it should prove distinct from Latreille's *barbicornis*.

New Zealand; Otago Museum; two males (16283).

Paramithrax sternocostulatus A. Milne Edwards (*teste* Miers).

Paramithrax sternocostulatus A. Milne Edwards. Miers, Ann. Mag. Nat. Hist. (5), IV, p. 9, 1879. Haswell, Proc. Linn. N. S. W., IV, p. 110, 1879; Ann. Mag. Nat. Hist. (5), V, p. 146, 1880; Cat. Austral. Crust., p. 13, 1882.

Paramithrax gaimardii Miers (not Milne Edwards), Cat. Crust. N. Z., p. 6, 1876.

Port Jackson, Australia; Australian Museum, Sydney; male and female (17013).

Found also in New Zealand.

Paramithrax (Leptomithrax) australis (Jacquinot).

Maia australis Jacquinot, in Jacquinot and Lucas, Voy. au Pole Sud, Zool., III, Crust., p. 11, 1853.

Paramithrax (Leptomithrax) australis Miers, Ann. Mag. Nat. Hist. (4), XVII, p. 220 1876; (Cat. Crust. N. Z., 1876).

One male specimen has been received from the Otago University Museum, Dunedin, New Zealand (16285). It is 93 millimeters long from the tip of the rostrum and 82.5 wide, without spines. The chelipeds are extremely long, about 223 millimeters; the hands are very long and strong.

Paramithrax (Leptomithrax) longimanus Miers.

Ann. Mag. Nat. Hist., (4), XVII, p. 220, 1876; (Cat. Crust. N. Z., 1876); Jour. Linn. Soc. London, XIV, p. 656, 1879.

Dunedin, New Zealand; Otago Museum; three males (16282).

The specimens do not agree exactly with Miers's description. Midway on the margin of the branchial region is a short, stout, blunt spine curved forward. The carapace is tuberculous rather than granulous. The length of the rostrum is only a little greater than half the width between the præorbital angles. Merus and carpus of cheliped tuberculous; manus conspicuously granulous inside, minutely so outside.

Chlorinoides longispinus (de Haan).

Maia (Chorinus) longispina de Haan, Fauna Japonica, p. 91, pl. XXIII, fig. 2, 1839.
Chorinus longispinus White, Crust. Brit. Mus., p. 123, 1847. Adams and White, Voy. Samarang, p. 12, 1848.
Chlorinoides longispinus Miers, Challenger Rept., Zoöl., XVII, p. 53, 1886.

Enoshima, Japan; P. L. Jouy (12345). Japan; H. Loomis (16274).

Chlorinoides spatulifer (Haswell).

Paramithrax spatulifer Haswell, Proc. Linn. Soc. N. S. W., VI, p. 540, 1881; Cat. Austral. Crust., p. 11, 1882. Miers, Crust. Alert., p. 194, 1884.
Chlorinoides spatulifer Miers, Challenger Rept., Zoöl., XVII, p. 52, 1886.

Port Stevens, Australia; Australian Museum, Sydney; one female (17014).

Pisa tetraodon (Pennant).

Cancer tetraodon Pennant (British Zoölogy, IV, pl. VIII, fig. 15).
Pisa tetraodon Leach, (Malac. Podoph. Brit., pl. 20, 1815). Milne Edwards, Hist. Nat. Crust., I, p. 305, pl. XIV bis, fig. 1, 1834, and synonymy. Bell, Brit. Crust., p. 22, 1853. Carrington and Lovett, Zoölogist (3), V, p. 358, 1881. Miers, Challenger Rept., Zoöl., XVII, p. 54, 1886. Aurivillius, K. Sv. Vet.-Akad. Hand., Bd. 23, 1, p. 49, 1889.

Weymouth; A. M. Norman (6329). Channel Islands; Edward Lovett (6549). Locality unknown (16278).

Found also in the Mediterranean, Portugal, the Azores, and Teneriffe, 50 to 90 fathoms, and at Aden.

Pisa (Arctopsis) tribulus (Linné).

? Cancer tribulus Linné (Syst. Nat., ed. 12, p. 1045, 1766).
Pisa gibbsii Leach, Trans. Linn. Soc., XI, p. 327, 1815. Carrington and Lovett, Zoölogist (3), V, p. 360, figs. 1 and 2, 1881.
Pisa (Arctopsis) tribulus Miers, Challenger Rept., Zoöl., XVII, p. 55, 1886, and synonymy.

Channel Islands; Edward Lovett (6532). Guernsey; A. M. Norman (6315).

Found in the Mediterranean to 75 fathoms, and ranging to the Cape Verde Islands, 38 fathoms.

LEPTECES, gen. nov.

Carapace subpyriform or triangulate, slightly convex, tuberculous. Præocular spine present. Rostral horns divergent. Orbits with two hiatuses above and one below. Abdomen in both sexes seven jointed. Antennæ with a spine at the antero-external angle of the basal joint, the flagellum visible in a dorsal view at the sides of the rostrum. Exterior maxilliped with the antero-external angle produced and rounded, the inner angle notched. Chelipeds more slender than the ambulatory legs; palms very long and slender; fingers meeting along their inner edges. Ambulatory legs of moderate length, the anterior pair much the longer; joints spinous.

Lepteces ornatus, sp. nov.

Plate VI, Fig. 1.

Entire surface, except the hands, granulous. Carapace ornamented with tubercles of two kinds; first and most prominent, raised mushroom like tubercles, each surmounted by a flat, circular disk, granulous and spinulous on the margins. Tubercles of this character, with disks overlapping, surround the cardiac region and outline the inner margin of the branchial region; there is one on the posterior edge of the gastric, four follow the postero-lateral margin, two are arranged transversely on the intestinal region, while a line of four runs almost transversely across each hepatic region and up on the gastric. There are many additional smaller tubercles of this character. The second variety of tubercle is smaller, but slightly more elevated than the first, spheroidal at the summit, granulous, and surmounted by a few long hairs. There are four such tubercles on the gastric region, two of which are on the median line, six on the branchial region, two or three on the cardiac region, and three on the posterior margin. The entire surface between and beneath the raised tubercles is crowded with stellar granules, varying in size.

The rostrum is composed of two regularly tapering, divergent spines, with long hairs, especially on the inner margins. Præocular spine strongly curved upward, at an angle of about 45° with the rostrum; acute, bearing a few long hairs near the tip.

Basal joint of antenna with the outer margin convex and tuberculous; a stout spine at the antero-lateral angle, pointing forward. Flagellum exceeding the rostrum. Posterior margin of the epistome directed abruptly backward near the center, then turning again almost transversely to form a shallow V at the median line. The depressions between the abdominal segments in the male are continued in grooves on the sternum.

Chelipeds in both sexes weak, slender, much shorter than the first pair of ambulatory legs; merus strongly and irregularly tuberculose; carpus feebly so; hands smooth, extremely slender, tapering to the fingers, which are in contact; prehensile edges finely dentate. Ambulatory legs stout, somewhat angled; anterior pair much the longest, armed with an irregular row of long spines above, a series of shorter spines on the inferior outer margin, and a few scattered spines. Proximal half of dactyls spinulose, extremities horny.

Length, including rostrum, 17; width, 9 millimeters.

Two males and six females of this unique form were collected by the U. S. Fish Commission steamer *Albatross* off Arrowsmith Bank, Yucatan, lat. 20° 59′ 30″ N., long. 86° 23′ 45″ W., 130 fathoms, coral, station 2351, 1885 (9546).

Hyastenus diacanthus (de Haan).

Pisa (*Naxia*) *diacantha* de Haan, Fauna Japonica, p. 96, pl. XXIV, fig. 1, and pl. G, 1839.
Naxia diacantha White, Crust. Brit. Mus., p. 6, 1847. Adams and White, Voy. Samarang, Crust., p. 10, 1848. Stimpson, Proc. Acad. Nat. Sci. Phila., IX, p. 218, 1857. Heller, Reise Fregatte Novara, II, 3, p. 3, 1868. Aurivillius, K. Sv. Vet.-Akad. Hand., Bd. 23, 1, p. 51, pl. II, fig. 5, 1889.
Hyastenus diacanthus A. Milne Edwards, Nouv. Archiv. du Mus., VIII, p. 250, 1872. Miers (Cat. Crust. N. Z., p. 9, 1876); Proc. Zoöl. Soc. London, p. 26, 1879; Crust. Alert, pp. 194, 182, 1881; Challenger Rept., Zoöl. XVII, pp. 56, 57, 1886. Haswell, Proc. Linn. Soc. N. S. Wales, IV, p. 412, 1879; Cat. Austral. Crust., p. 20, 1882. Walker, Jour. Linn. Soc. London, XX, p. 109, 1887. De Man, Arch. f. Natur., LIII, p. 220, 1887. Cano, Boll. Soc. Nat. Napoli (1), III, p. 178, 1889.
Hyastenus verreauxii A. Milne Edwards, loc. cit.

Japanese seas; U. S. S. *Palos*; two females (16288, 16289).
Japan; H. Loomis; three males, five females (16273).
Sydney Harbor, New South Wales; William E. Langley (5740).
Distributed throughout the Indo-Pacific region.

Hyastenus caribbæus, sp. nov.

Plate VI, Fig. 2.

Carapace triangular-ovate, with a stout spine on the summit of the posterior portion of the branchial region, and another on the intestinal region just above the posterior margin. Regions distinct. There are three inconspicuous tubercles on the gastric, and one at the inner angle of each branchial region. Carapace covered with a short, close pubescence, with scattered bunches of hair. Rostrum nearly as long as the carapace, entire for about one-fourth its length; horns slender, slightly divergent; margins hairy. Basal antennal joint without a spine. Flagellum not so long as the rostrum.

Chelipeds slender, unarmed; merus subcylindrical; manus long, compressed, narrowest near the carpus, widening slightly to the base of the fingers; dactyl arched, with a tooth near the base; fingers gaping at the base when closed. Ambulatory legs very slender, the first pair longer than the chelipeds.

Length of carapace, exclusive of rostrum, 13; width, 10.5; length of rostrum, 9.5; length of cheliped, about 24 millimeters. A specimen with a total length of 14 millimeters has comparatively a much shorter rostrum and spines than the one described above.

Sabanilla, United States of Colombia; U. S. Fish Commission steamer *Albatross*, 1884; two males (16315). This is the first species of *Hyastenus* recorded from the Atlantic Ocean.

Hyastenus longipes (Dana).

Plate VII.

Chorilia longipes Dana, Amer. Jour. Sci. (2), XI, p. 269, 1851; Crust. U. S. Expl. Exped., I, p. 91, pl. I, fig. 5, 1852. Stimpson, Jour. Boston Soc. Nat. Hist., VI, p. 455, 1857. Lockington, Proc. Cal. Acad. Sci., VII, p. 69, 1876.
Hyastenus (*Chorilia*) *longipes* Miers, Jour. Linn. Soc. London, XIV, p. 658, 1879; Proc. Zoöl. Soc., London, p. 27, 1879.

Hyastenus japonicus Miers, Proc. Zoöl. Soc. London, p. 27, pl. 1, fig. 2, 1879; Challenger Rept., Zoöl., XVII, p. 56, 1886.

Hyastenus longipes Miers, Challenger Rept., Zoöl., XVII, p. 56, 1886.

This species ranges from 57° north latitude, off Kadiak, Alaska, to 32° north latitude, off San Diego, Cal., and in depth from 27 to 603 fathoms. It exhibits wide variations from Dana's types, especially in more southern latitudes, where, as a rule, the carapace is very much swollen at the branchial regions, making the width much greater in proportion to the length; the second and third joints of the antennæ are much more slender; the hepatic region is furnished with a sharp spine; and, lastly, the tubercles of the carapace are more numerous and some of them spinous. These characteristics, if uniform, would be specific, but the two extremes intergrade to such an extent as to render impossible even a varietal separation. The broad form is with one exception confined to deep water; the typical *longipes* ranges from 27 fathoms in the north to 456 in the south. Variations exist in specimens from the same locality; for example: The broad forms may possess a hepatic spine or a tubercle; the antennal joints are narrow in some individuals and wide in others. Occasional specimens of the narrow form have a sharp hepatic spine. An examination of the branchiæ of the broad and narrow forms shows that they are larger in the former. Corresponding differences exist in the size of the maxillipeds, the flabella being larger, as well as the scaphognathite of the second maxilla. The endopodite of the first maxilliped, however, which is seen to be so different in the two species of *Chionœcetes*, is the same size and shape in the two forms of *Hyastenus longipes*.

The width of the typical form ranges from 0.71 to 0.8 of its length; of the wider form, from 0.82 to 0.9 of its length; the length being measured from between the bases of the cornua. The measurements are taken of male specimens, with one exception. In the following tables the stations are arranged from north to south:

Table of measurements.

Station.	Length of carapace.	Width of carapace.	Proportion of length to width.
	mm.	*mm.*	
2862	21	15	1 : .71
2862	25.5	19	1 : .74
2882	33	25	1 : .76
3112	20	15	1 : .75
3112	28	21.5	1 : .77
3112	19.5	15	1 : .77
3114	18	14	1 : .78
3126	27	21.5	1 : .8
2960	35	28	1 : .8
2979	46	41.5	1 : .9
2896 ♀	23	18	1 : .78
2896	18	13	1 : .72
2980	29	24	1 : .83
2980	35.5	30	1 : .84
2936	53.5	46	1 : .86
2936	55.5	50	1 : .9
2928	47	40	1 : .85
2927	31.5	26	1 : .82
2927	38	31.5	1 : .83
2934	28.5	23.5	1 : .82

RECORD OF SPECIMENS EXAMINED.

From Kadiak to San Diego; U. S. Fish Commission steamer *Albatross*, 1888–1891:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.	Remarks.
				Fath.	Temp.	Materials.		
		° ′ ″	° ′ ″		°			
15496	2855	57 00 00	153 18 00	69	44	gn. M.....	Aug. 10	Typical form.
15497	2862	50 49 00	127 36 30	238	44.7	gy. S. P.....	Sept. 1	Do.
15495	2877	48 33 00	124 53 00	59	45.5	bk. S. M....	Sept. 25	Do.
15499	2874	48 30 00	124 57 00	27	50.3	R. Sh.....	Sept. 24	Do.
17081	3449	48 29 40	124 40 10	135	.....	gy. S. G.....	Aug. 28	Do.
17085	3454	48 27 50	124 42 40	152	44.2	gy. S. rky...	Sept. 1	Do.
17083	3451	48 25 10	124 37 50	106	45	G. St.....	Aug. 28	Do.
17086	3459	48 24 20	124 24 40	123	44.5	gy. S. P.....	Sept. 2	Do.
17088	3466	48 18 30	123 22 00	56	48.5	gy. S.Sh. rky	Sept. 2	Do.
17080	3445	48 16 00	123 45 05	100	44	rky.....	Aug. 27	Do.
15494	2865	48 12 00	122 49 00	40	51.7	P.....	Sept. 6	Do.
15498	2882	46 09 00	124 22 30	68	45.8	gy. S.....	Oct. 13	Do.
17626	3085	44 29 30	124 17 00	42	46	fne. gy. S....	Sept. 2	Do.
16776	2889	43 59 09	124 56 00	46	47.7	C. Sh.....	Oct. 19	Typical form, but with hepatic spine.
16030	3350	38 58 10	123 57 05	75	48.4	fne. S. M....	Sept. 25	Typical form.
15515	3112	37 08 00	122 47 00	296	41.8	fne. gy. S ...	Mar. 12	Do.
15512	3114	37 06 00	122 32 00	62	.....	M.....	Mar. 12	Do.
15511	3205	36 55 10	122 23 50	240	43.7	bk. S. R	Apr. 12	Do.
15516	3126	36 49 20	122 12 30	456	52.8	gn. M.....	Mar. 13	Intermediate in width, otherwise typical.
16777	3187	36 14 00	121 58 40	298	41.1	yl. S. M.....	Apr. 3	Typical form.
15511	3193	35 25 50	121 09 10	160	44.4	gn. M.....	Apr. 5	Do.
15596	2893	34 12 30	120 32 30	145	48.6	fne. gy. S.M.	Jan. 5	Do.
15508	2960	34 10 45	120 16 45	267	48	gn. M.....	Feb. 9	Intermediate in width, otherwise typical.
15507	2956	33 57 30	120 18 30	52	53.1	fne. gy. S. R.	Feb. 8	Typical form.
16031	2979	33 56 30	119 22 30	388	.....	gn. M.....	Feb. 12	Broad form.
15509	2896	33 55 30	120 28 00	376	42.8	yl. M.....	Jan. 6	Typical form.
15502	2980	33 49 45	119 24 30	603	38.9	gn. M.....	Feb. 12	Broad form; 9 specimens with hepatic spine, 1 without.
15510	2982	33 24 45	119 07 00	178	46.7	S. M. G.....	Feb. 13	Broad form.
15505	2937	33 04 30	117 42 00	464	46.5	gn. M.....	Feb. 4	Do.
15501, 15500	2936	32 49 00	117 27 30	359	49	M.....	Feb. 4	Broad form. Second article of antenna wide in some specimens.
15504	2928	32 47 30	118 10 00	417	41	bk. S. G	Jan. 23	Do.
15503	2927	32 43 00	117 51 00	313	43.3	gn. M.....	Jan. 23	Broad form. Some specimens with hepatic tubercle.
15506	2934	32 33 30	117 16 00	36	58.2	gy. S	Jan. 26	Do.

Hyastenus japonicus Miers (*loc. cit.*) is apparently identical with *longipes*, as the length and divergence of the rostral spines, the length of the antennal spines, and the spines on the merus are variable characters in *longipes*.

Hyastenus, sp.

Two small and immature specimens from Lower California have been referred to this genus. The species is distinct from *longipes*, but its characters can not be distinctly determined without larger and more numerous specimens. The surface is pubescent. As in *longipes* the carapace is tuberculous and spinulous, but broader anteriorly. The epibranchial spine is slender. There is a prominent hepatic spine as in the southern form of *longipes;* the postorbital spine is slender and between it and the hepatic spine there is a shorter subhepatic spine visible from above. Præorbital spine present. The front is broader than in *longipes*, the slender rostral horns not so divergent, fringed with long hairs on the inner margin. Basal antennal joint with a slender

spine at the antero external angle, and a spinule further back on the margin. The larger specimen, a female, has slender chelipeds; merus and carpus spinuliferous, as is also the manus on the upper margin near the carpus. Ambulatory legs slender; meral joints spinulous above, dactyli spinulous beneath.

Length, including rostrum, 8; width 4.5 millimeters. The smaller specimen is only 5 millimeters long.

Lat. 24° 58′ 15″ N., long. 115° 53′ W., 36 fathoms, temperature 64.3°, coralline; station 2989, U. S. Fish Commission steamer *Albatross*, 1889 (17380).

Naxia robillardi Miers.

Proc. Zoöl. Soc. London, p. 339, pl. xx, fig. 1, 1882; Challenger Rept., Zoöl., xvii, pp. 60, 61, 1886; Pocock, Ann. Mag. Nat. Hist. (6), v, p. 79, 1890.

Mauritius; H. A. Ward; one female (16316). This species has been taken, at 30 fathoms, off Mauritius.

Scyra acutifrons Dana.

Amer. Jour. Sci. (2), xi, p. 269, 1851; Crust. U. S. Expl. Exped., i, p. 95, pl. ii, fig. 2, 1852. Stimpson, Jour. Boston Soc. Nat. Hist., vi, p. 455, 1857; Lockington, Proc. Cal. Acad. Sci., viii, p. 69, 1876. Miers, Jour. Linn. Soc. London, xiv, p. 663, 1879; Challenger Rept., Zoöl., xvi, p. 62, 1886. Smith, Rept. Geol. Survey Canada for 1878-'79, p. 210 B (1880).

A large series of specimens serves to confirm Prof. Smith's supposition that Dana's description was based on immature individuals. In large males the carapace is very nodulous, the rostrum wide, and the chelipeds strongly developed. In females the regions are much less elevated, the gastric region evenly rounded, without tubercles.

RECORD OF SPECIMENS EXAMINED.

Kadiak, Alaska; W. G. W. Harford (11801).
Victoria, B. C.; Dr. C. F. Newcombe (15793).
Port Orchard, Puget Sound; O. B. Johnson (14966).
Puget Sound; D. S. Jordan (3099).
Monterey, Cal.; D. S. Jordan (16291); Dr. Canfield (3119).
Southern California; W. H. Dall (16290).
From Vancouver Island to Santa Barbara, Cal.; U. S. Fish Commission steamer *Albatross*, 1888–1890:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom.			Date.
				Fath.	Temp.	Materials.	
		° ′	° ′				
16344	2881	49 00 00	125 48 00	24	52.3	gy. S	Sept. 26
16343	2879	48 53 00	125 53 00	34	50.3	Rocks	25
16020	2874	48 30 00	124 57 00	27	50.3	R. Sh	24
15543	3124	36 55 10	122 04 00	21	52.3	rky	Mar. 13
16341	2961	34 22 45	119 40 30	21	.....	gn. M	Feb. 11
16342	2969	34 20 40	119 37 45	26	58.0	gy. S. P. Sh.	11

Following out the suggestion of Mr. Miers, I have placed *Scyra umbonata* Stimpson among the Inachidæ.

Eurynome aspera (Pennant).

Cancer asper Pennant (Brit. Zoöl., IV, t. X, f. 3, p. 13).

Eurynome aspera Leach (Malac. Brit., t. XVII, 1815). Guérin, Icon. Règne Anim., II, pl. VII, fig. 4. Milne Edwards, Hist. Nat. Crust., I, p. 351, pl. XV, fig. 18, 1834, and synonymy. Bell, Brit. Crust., p. 46, fig., 1853. Miers, Jour. Linn. Soc. London, XIV, p. 659, 1879. Carrington and Lovett, Zoölogist (3), V, p. 418, 1881. Scott, 6th Ann. Rept. Fishery Board for Scotland, pt. III, p. 256, 1888. Aurivillius, K. Sv. Vet.-Akad. Hand., Bd. XXIII, 1, p. 51, pl. I, figs. 7, 8, 1889. Cano, Boll. Soc. Nat. Napoli (1), III, p. 178, 1889. Osorio, Jor. Sci. Lisboa (2), I, p. 53, 1889.

Eurynome spinosa Hailstone, Mag. Nat. Hist., VIII, pp. 549, 638, 1835.

Guernsey: A. M. Norman (6314). Channel Islands: Edward Lovett (6567).

Recorded from the British Isles, France, and the Mediterranean.

Pelia mutica (Gibbes).

Pisa mutica Gibbes, Proc. Amer. Assoc. Adv. Sci., III, p. 171, 1850.

Pelia mutica Stimpson, Ann. Lyc. Nat. Hist. N. Y., VII, p. 177, 1860. Smith, Rept. U. S. Commr. of Fisheries for 1871 and 1872, p. 548 (1874). A. Milne Edwards, Miss. Sci. au Mexique, pt. 5, I, p. 73, pl. XVI, fig. 2, 1875. Kingsley, Proc. Acad. Nat. Sci. Phila., XXXI, p. 385, 1879.

I find this species extremely variable in the divergence of the rostrum and in the antero-external angle of the basal joint, which is sometimes unarmed and sometimes armed with a small spine. The species ranges from Vineyard Sound to the west coast of Florida, and the more northern specimens, that is, from Vineyard Sound to Beaufort, are those most likely to present the antennal spine, while the southern forms have usually a blunt angle at that point. There is no constancy in this occurrence, however, and no accompanying characteristic that is invariable.

RECORD OF SPECIMENS EXAMINED.

Vineyard Sound, Mass., low water to 12 fathoms; U. S. Fish Commission.
Virginia (Union College Coll.).
Beaufort, N. C. (Union College Coll.).
Calibogne Sound, S. C.; U. S. Fish Commission (16350, 16773).
Florida:
- Florida Bay (Union College Coll.).
- Marco; H. Hemphill (16999).
- Charlotte Harbor; W. H. Dall (17002).
- Sarasota Bay; H. Hemphill (16208).
- Goodland Point; H. Hemphill (17000).
- Cedar Keys; Lieut. J. F. Moser, U. S. Navy (16207); H. Hemphill (6119), on coral, one fathom (17001).

Pelia rotunda A. Milne Edwards.

Miss. Sci. au Mexique, Pt. 5, I, p. 74, pl. XVI, fig. 4, 1875.

Two males from off the Rio de la Plata, one in lat. 36° 42′ S., long. 56° 23′ W., 11½ fathoms, sand, broken shells, station 2764, U. S. Fish Commission steamer *Albatross*, 1888 (16347), and the other in lat. 36° 47′ S., long. 56° 23′ W., 10½ fathoms, sand, broken shells, station 2766 (17321).

A. Milne Edwards records this species in the text as *rotunda*, while in the description of the figure it is designated as *rotundata*. The types are from off Patagonia and Brazil.

In characterizing the two specimens at hand, I have compared them with specimens of *mutica* of equal length from South Carolina, and have made the following observations: The width at the branchial regions is the same, but *rotunda* is wider at the hepatic regions. The gastric and cardiac regions are a little more swollen in this species. The rostrum is the same length in both species, but in *mutica* the horns are strongly divergent, while in *rotunda* the outer margins are subparallel. The rostrum is more deflexed and wider at the base in *rotunda* and there is a corresponding width underneath across the basal antennal joints. The fingers do not differ essentially from those of *mutica*. It is very probable that a large series of specimens of *rotunda* would show that the above-mentioned characters are not constant, but offer individual variations as in *mutica*.

Pelia pacifica A. Milne Edwards.

Miss. Sci. au Mexique, Pt. 5, 1, p. 73, pl. XVI, fig. 3, 1875.

RECORD OF SPECIMENS EXAMINED.

California:

Catalina Harbor; W. H. Dall (16204).

Southern California; W. H. Dall (16203); many specimens.

San Diego, 10 fathoms; H. Hemphill (6385). C. R. Orcutt (16205, 16206); Rosa Smith (16398).

Gulf of California; U. S. Fish Commission, 1889:

Off Adair Bay, Mexico, lat. 31° 22′ N., long. 114° 07′ 45″ W., 17 fathoms, gravel, broken shells, temperature 65.2°, station 3026 (16349); one female, with rostral horns a little more divergent than in typical specimens, but otherwise corresponding.

The types are from the Bay of Panama.

Pelia, sp.

Much like *pacifica*. The single male specimen, however, has chelipeds very strongly developed. Manus wide and swollen, fingers arched. The first ambulatory leg is longer than in *pacifica*, the merus joint nearly reaching the extremity of the rostrum; the penult joint is longer and more slender than in *pacifica*. The rostrum has its horns converging, but is deformed, as the two sides are of unequal length.

Off Magdalena Bay, Lower California, lat. 24° 58′ 15″ N., long. 115° 53′ W., 36 fathoms, coralline, temperature 64.3°; station 2989, U. S. Fish Commission steamer *Albatross*, 1889 (16348).

Nibilia erinacea A. Milne Edwards.*

Herbstia Schramm (Crust. de la Guadeloupe, p. 17, pl. VII, fig. 23, 1867).

Nibilia erinacea A. Milne Edwards, Miss. Sci. au Mexique, Pt. 5, 1, p. 133, pl. XXV, 1878. Smith, Rept. Commr. of Fisheries for 1885, p. 627 (1887).

**Nibilia armata* A. Milne Edwards belongs properly among the Inachidæ.

RECORD OF SPECIMENS EXAMINED.

Off Cape Hatteras, N. C., and Gulf of Mexico; U. S. Fish Commission steamer *Albatross*, 1884–1885:

Cat. No.	Station.	Lat. N.	Long. W.	Bottom			Date.	Sex.	
				Fath.	Temp.	Materials.		♂	♀
		° ′ ″	° ′ ″		°				
7256	2301	35 11 30	75 05 00	59	75	crs S. bk. Sp	Oct. 21	1	1
14091	2595	35 08 00	75 05 30	63	.....	gy. S. brk. Sh	17	1	1*
9688	2386	29 15 00	88 06 00	60	61.8	bu. M	Mar. 4	1 young.	

*With eggs.

Recorded from the Caribbean Sea.

Schizophrys aspera (Milne Edwards).

Mithrax asper Milne Edwards, Hist. Nat. Crust., I, p. 320, 1834. Dana, Crust. U. S. Expl. Exped., I, p. 97, pl. II, fig. 4, 1852.

Maja (*Dione*) *affinis* de Haan, Fauna Japonica, Crust., p. 94, pl. XXII, fig. 4, 1839. Adams and White, Voy. Samarang, p. 15, 1848. Stimpson, Proc. Acad. Nat. Sci. Phila., IX, p. 218, 1857.

Schizophrys serratus White, Crust. Brit. Mus., p. 9, 1847; Proc. Zoöl. Soc., London, XV, p. 223, fig., 1847; Ann. Mag. Nat. Hist. (2), II, p. 283, fig., 1848. Adams and White, op. cit., p. 16.

Schizophrys spiniger White, loc. cit. Adams and White, op. cit., p. 17.

?? *Mithrax quadridentatus* Mac Leay, in Smith, Annulosa, Zoöl. South Africa, p. 58, 1849.

Schizophrys affinis Stimpson, Amer. Jour. Sci., XXIX, p. 133, 1860.

Schizophrys aspera Stimpson, loc. cit. A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat., VIII, p. 231, pl. X, figs. 1–1 f, 1872. Miers, Jour. Linn. Soc. London, XIV, p. 660, 1879; Crust. H. M. S. Alert, p. 197, 1884; Challenger Rept., Zoöl., XVII, p. 67, 1886. Haswell, Proc. Linn. Soc. N. S. W., IV, p. 447, 1879; Ann. Mag. Nat. Hist. (5), V, p. 117, 1880; Cat. Austral. Crust., p. 22, 1882. De Man, Jour. Linn. Soc. London, XXII, p. 20, 1887; Archiv für Natur., LIII, p. 226, 1887. Walker, Jour. Linn. Soc. London, XX, p. 113, 1887. Aurivillius, op. cit., p. 51. Cano, op. cit., p. 179.

Schizophrys serrata Stimpson, loc. cit.

Schizophrys spinigera Stimpson, loc. cit.

Mithrax spinifrons A. Milne Edwards, Ann. Soc. Entom. France (4), VII, p. 263, 1867.

Mithrax affinis Capello, Jor. Sci. Lisboa, p. 264, pl. IIIa, fig. 4, 1871.

Mithrax (*Schizophrys*) *triangularis* Kossmann, (Crust. Reise Küsten. Rothen Meeres, pp. 11, 13, 1887).

M. (*S.*) *triangularis* var. *africanus* Kossmann, (op. cit., pp. 11, 14).

M. (*S.*) *triangularis* var. *indicus* Kossmann, (loc. cit.).

Japan; H. Loomis; four males and one female (16319) of the typical form, and corresponding to the figure by de Haan.

Samoa; H. A. Ward; one male and one immature female (16318) of the variety *spinifrons* (A. Milne Edwards).

This species is widely distributed throughout the Indo-Pacific region.

Pseudomicippa ? varians Miers.

Ann. Mag. N. H., (5), iv, p. 12, pl. ix, fig. 8, 1879; Crust. Alert, pp. 182, 197, 1881; Challenger Rept., Zoöl., xvii, p. 68, 1886.

Port Jackson, Australia; Australian Museum; one female (17015).

Micippa mascarenica (Leach).

Micippa philyra Leach (not Herbst), Zoöl. Misc., iii, p. 16, 1817. Guérin, Icon. Crust., pl. viii bis, fig. 1. Milne Edwards, Hist. Nat. Crust., i, p. 330, 1834. Adams and White, Voy. Samarang, p. 15, 1848. A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat., viii, p. 239, pl. xi, fig. 2, 1872. Richters, in Möbius (Meeresfauna Mauritius u. Seychellen, p. 113, pl. xv, figs. 6, 7, 1880). Miers, Crust. Alert, pp. 198, 182, 1881.

Micippa philyra var. *mascarenica* Kossmann, (op. cit., p. 7, pl. iii, fig. 2). Lenz and Richters, Abh. Senck. Naturf. Ges., xii, p. 421, 1881. Miers, op. cit., p. 525.

Micippa superciliosa Haswell, Proc. Linn. Soc. N. S. W., iv, p. 116, pl. xxvi, fig. 2, 1879; Ann. Mag. N. H. (5), v, p. 117, 1880; Cat. Austral. Crust., p. 25, 1882, var. Miers, op. cit., p. 199.

Paramicippa asperimanus Miers, op. cit., pp. 525, 517, var.

Micippa mascarenica Miers, Ann. Mag. Nat. Hist. (5), xv, p. 7, 1885; Challenger Rept. Zoöl., xvii, p. 69, 1886. Walker, Jour. Linn. Soc. London, xx, p. 109, 1887.

Mauritius; H. A. Ward; one male specimen of the typical form (16317). Length to base of rostrum, 18 millimeters; width, 16; length of rostrum, 9; length of cheliped, about 20; length of first ambulatory leg, about 22 millimeters.

Chelipeds smooth, covered with indistinct, light-colored spots. Palm slightly compressed, not dilated. Fingers with a very narrow hiatus at base when closed.

A common East Indian species.

Micippa spinosa Stimpson.

Micippa spinosa Stimpson, Proc. Acad. Nat. Sci. Phila., ix, p. 218, 1857. Haswell, Cat. Austral. Crust., p. 26, 1882. Miers, Ann. Mag. N. H. (5), xv, p. 8, 1885; Challenger Rept., Zoöl., xvii, p. 70, pl. viii, fig. 2, 1886.

Paramicippa spinosa Miers (Cat. Crust. N. Z., p. 9, 1876); Crust. Alert, pp. 182, 199, 1881. Haswell, Proc. Linn. Soc. N. S. W., iv, p. 447, 1879; Ann. Mag. N. H. (5), v, p. 117, 1880.

Port Jackson, Australia; two males and two females; Australian Museum, Sydney (17016).

Inhabits New Zealand also.

Micippa thalia aculeata (Bianconi).

Pisa (*Micippa*) *thalia* de Haan, Fauna Japon., Crust., p. 98, pl. xxiii, fig. 3, and pl. G, 1839 (non *Cancer thalia* Herbst).

Micippa aculeata Bianconi (Mem. Accad. Bologna, iii, p. 103, pl. x, fig. 2, 1851); Hilgendorf, Monats. K. Akad. Wiss. Berlin, p. 786, 1878.

Micippa haanii Stimpson, Proc. Acad. Nat. Sci., Phila., p. 217, 1857; de Man, Jour. Linn. Soc. London, xxii, p. 20, 1887.

Micippa thalia var. *aculeata* Kossmann, (Malac. in Zool. des R. Meeres, p. 8, pl. iii, fig. 5, 1877); Miers, Ann. Mag. N. H. (5), xv, p. 11, 1885.

Micippa thalia var. *haani* Miers, Crust. Alert, pp. 524, 517, 1881.

Japan; H. Loomis. Recorded also from Chinese Seas and Indian Ocean.

LIST OF SPECIES OF MAIIDÆ NOT REPRESENTED IN THE COLLECTION OF THE U. S. NATIONAL MUSEUM.

EASTERN ATLANTIC OCEAN.

Herbstia orata (Stimpson)..... Cape Verde Islands, 20 fathoms
rubra (A. Milne Edwards)..... Cape Verde Islands
violacea (A. Milne Edwards)..... Cape Verde Islands; West Africa; etc.
cryophora Rochebrune..... Senegambia
bocagei Ozorio (*Fide* Archiv für Natur., II, 2, 1889)..... Eastern Atlantic
Maia goltziana Oliviera..... Portugal
Phycodes antennarius A. Milne Edwards..... St. Vincent
Pisa hirticornis (Herbst)..... Mediterranean; Aden; also East Indies (Herbst)
carinimana Miers..... Canaries; Senegambia
Schizophrys dichotoma (Latreille)..... Mediterranean; also East Indies (Adams and White)

EAST COAST OF AMERICA.

Herbstia (*Herbstiella*) *depressa* (Stimpson)..... St. Thomas, Brazil, 30 to 350 fathoms
Calocerus spinosus A. Milne Edwards..... Florida, 19 fathoms
Oplopisa spinipes A. Milne Edwards..... Florida Straits, deep water
Pisa antilocapra Stimpson..... Off Florida, 52 to 118 fathoms
prælonga Stimpson..... Off Florida, 118 to 124 fathoms
crinacea A. Milne Edwards..... Florida Straits, 37 fathoms
Notolopas brasiliensis Miers..... Bahia, 7 to 20 fathoms
Rochinia gracilipes A. Milne Edwards..... Cape Corrientes; mouth Rio Negro, 30 fathoms; near Patagonia, 44 fathoms.
Temnonotus granulosus A. Milne Edwards..... Barbados, 100 fathoms
simplex A. Milne Edwards..... Barbados, 100 fathoms

WEST COAST OF NORTH AMERICA.

Chorilibinia angusta Lockington..... Gulf of California
Herbstia pubescens Stimpson..... Manzanillo, Mexico
(*Herbstiella*) *tumida* (Stimpson)..... Manzanillo, Mexico
(*Herbstiella*) *parrifrons* Randall..... West Coast of America, Cape St. Lucas
Notolopas lamellatus Stimpson..... Panama: Manzanillo

WEST COAST OF SOUTH AMERICA.

Chionoecetes chilensis Streets..... Chile
Herbstia pyriformis (Bell)..... Galapagos Islands
(*Herbstiella*) *edwardsii* (Bell)..... Galapagos Islands
Pisoides edwardsii Bell..... Panama; Galapagos Islands; Chile; Straits of Magellan
Pelia pulchella Bell..... Galapagos Islands

EAST INDIAN REGION.

Egeria arachnoides (Rumph)..... Australian, Indian, Malaysian, and Chinese seas, to 49 fathoms.
Chorilibinia gracilipes Miers..... N. and NE. Australia; New Guinea
Herbstia crassipes (A. Milne Edwards)..... Australia
Maia spinigera de Haan..... Japan; East Indies
miersii Walker..... Singapore
? *rosselii* Audouin..... Egypt
Paramithrax ursus (Herbst)..... "South Sea"
verrucosipes (Adams and White)..... Eastern seas
barbicornis (Latreille)..... Australia; New Holland

Paramithrax gaimardii Milne Edwards ..... New Zealand
spinosus Miers ..... Norfolk Island
minor Filhol ..... Cook Strait, New Zealand
(*Leptomithrax*) *australiensis* Miers ..... Tasmania
(*Leptomithrax*) *brevirostris* Miers ..... Locality unknown
(*Leptomithrax*) *compressipes* Miers ..... Canton
(*Leptomithrax*) *spinulosus* Haswell ..... Tasmania; King George's Sound
Chlorinoides longispinus bituberculatus Miers ..... Amirante and Providence groups, 19 to 22 fathoms
acanthonotus (Adams and White) ..... Borneo
aculeatus (Milne Edwards) ..... Seas of Asia
aculeatus armatus (Miers) ..... N. and NE. Australia, 3 to 11 fathoms
halimoides (Miers) ..... Oriental seas
coppingeri (Haswell) ..... N. and E. Australia; Japan
tenuirostris (Haswell) ..... Torres Strait
filholi (A. Milne Edwards) ..... Stewart Island
Acanthophrys cristimanus A. Milne Edwards ..... Nonkahiva; Marquesas
paucispina Miers ..... Ovalau, Fiji Islands
Pisa brevicornis A. Milne Edwards ..... Madagascar
acutifrons A. Milne Edwards ..... Zanzibar
Hyastenus aries (Latreille) ..... Coromandel
spinosus A. Milne Edwards ..... Archipel Viti; Mozambique
sebæ White ..... Philippines; Amboina; Indian Ocean
planasius (Adams and White) ..... Chinese Seas; N and NE. Australia; Singapore.
pleione (Herbst) ..... Oriental Seas; Mergui Archipelago
oryx A. Milne Edwards ..... Philippines; Australia; New Caledonia; Singapore; Providence Island.
gracilirostris Miers ..... Fiji Islands
oratus (Dana) .. Sandwich Islands; African or Eagle Islands, 10 fathoms; Poivre Island or Isle des Roches.
sinope Adams and White ..... China Sea; Philippine Islands
convexus Miers ..... Port Molle, N. E. Australia, 11 fathoms
hilgendorfi de Man ..... Mergui Archipelago
brockii de Man ..... Amboina
tenuicornis Pocock ..... China Sea, 25 to 30 fathoms
fasciicularis (Kranss) ..... Natal
Lepidonaxia defilippii Targioni-Tozzetti ..... Java
Segra compressipes Stimpson ..... Japan, 6 to 50 fathoms
Naxia serpulifera Milne Edwards ..... N. and W. Australia
hirta A. Milne Edwards ..... East Africa; Indian Ocean
hystrix Miers ..... Moluccas, Amboina, 100 fathoms
elegans (Miers) ..... Near Ki Islands, 110 fathoms
taurus Pocock ..... China Sea, 32 fathoms
Micippoides angustifrons A. Milne Edwards ..... Fiji
longimanus Haswell ..... Port Jackson, Australia
Eurynome longimana Stimpson ..... Cape of Good Hope, 10 fathoms
crosa A. Milne Edwards ..... Samoa
stimpsonii Miers ..... Providence Reef, Mascarenes
Schizophrys dama (Herbst) ..... ?W. Australia; ?America
Cyclax perryi Dana ..... Pitts Island, Kingsmill Group
spiniciuctus Heller ..... Red Sea
(*Cyclomaia*) *suborbicularis* (Stimpson) ..... Gaspar Straits
(*Cyclomaia*) *margaritata* A. Milne Edwards .. W. Australia; New Caledonia; Sandwich and Viti Islands.

Criocarcinus superciliosus Milne Edwards.....New Caledonia
Pierocerus armatus A. Milne Edwards.....New Caledonia
Pseudomicippa nodosa Heller.....Red Sea
tenuipes A. Milne Edwards.....?Indian Ocean
Micippa cristata (Linné).....Indo-Malaysian Seas; Philippine Islands; Java
philyra (Herbst).....Indo-Pacific; Red Sea
thalia (Herbst) typical.....Indo-Pacific; Red Sea; Natal
thalia miliaris (Gerstæcker).....Red Sea
spinosa affinis Miers..Bass Strait; East Moncœur Island; New Zealand to 38 fathoms.
curtispina Haswell.....N. and NE. Australia; Singapore
Paramicippa tuberculosa Milne Edwards.....S. Australia

EXTRACT FROM AN UNPUBLISHED REPORT OF DR. WILLIAM STIMPSON, ON THE CRUSTACEA OF THE NORTH PACIFIC EXPLORING EXPEDITION, 1853 TO 1856.

Leptopus longipes (Herbst) Latreille.*

Cancer longipes Herbst (non Lin.).
Leptopus longipes Latreille; Guérin, Icon., pl. x, fig. 3.
Egeria herbstii Milne Edwards, Hist. Nat. des Crust., i, p. 292.
Egeria longipes Adams and White, Voy. Samarang, Crust., p. 7.

Among a large number of examples of this species collected by the expedition there are two adult males which differ so much in the size and character of the chelopoda from the specimens ordinarily found and those hitherto figured and described, that they might well be taken for a distinct species. The carapax of one of these specimens is 1 inch long and 0.85 inch broad. Proportion of breadth to length, 1 : 1.17. The chelopoda are large and robust, 1.8 inches in length. Hands much inflated; fingers gaping posteriorly; movable one with a large tooth at its inner base.

In nine-tenths of the male specimens taken, many of which are at least two-thirds as large as that above described, the hands are slender and weak, like those of the female; this (immature) form is that represented by Guérin's figure. In the sterile females, which occurred in equal numbers with the ordinary females and the males, the abdomen is flattened and only two-thirds as wide as the sternum.

In all of our specimens the præorbital tooth is very small; the orbits are interrupted above by two deep fissures, and below by one wide fissure divided into two by a small tooth. The projections of the carapax are rather tubercles than spines. In color, the body is light reddish above, mottled with white; below, white; feet, whitish annulated with red. The figure given by Milne Edwards in the "Règne Animal" is less characteristic of our specimens than that of Guérin.

Dredged in the Harbor of Hong Kong, China, on a muddy bottom, at the depth of 6 fathoms.

* A synonym for *Egeria arachnoides* (Rumph.).—M. J. R.

Chionœcetes Behringianus Stimpson.

Chionœcetes Behringianus Stimpson, Proc. Bost. Soc. Nat. Hist, VI, 81, Feb., 1857; Bost. Jour. Nat. Hist., VI, 119, 1857.

Peloplastus Pallasii Gerstæcker, Archiv für Naturgeschichte, XXII, 105, Taf. I, fig. 1.

Gerstæcker has given an excellent figure of this species in the Archiv für Naturgeschichte for 1856, but his paper does not appear to have been published before April, 1857; our name has therefore priority. The entomologist of Berlin does not seem to have been acquainted with Kröyer's genus *Chionœcetes*, to which the species certainly belongs; in fact it is most closely allied to the type *C. opilio*.

This species was found in Behring Straits, and northward as far as the expedition penetrated; many specimens having been dredged by Capt. Rodgers. It also occurred to southward of the straits, as far as Mativi Island. It is found only in deep water, and on bottoms more or less muddy. In a living state it was of a light brick-red color above, often iridescent; below, yellowish-white; sides of feet shining white. The posterior feet are short. The dimensions of the carapax of a large female are—length, 2.57; breadth, 2.72 inches.

In Gerstæcker's figure the surface of the carapax posteriorly, and the upper sides of the ambulatory feet, are represented as much more rugose than in any of our specimens.

Chionœcetes is evidently nearest allied to *Hyas*, although probably a higher form. In young specimens the resemblance to *Hyas* is easily noticed. *Hyas chilensis* should probably belong to it. It has considerable resemblance in general appearance to *Salacia* of the opposite extremity of the American continent, of which it may be considered the analogue.

Hyas latifrons Stimpson.†

Hyas coaretatus Stimpson (non Leach), Bost. Jour. Nat. Hist., VI, p. 450, 1857.

This species differs from *H. coaretatus* of the North Atlantic in the following characters, which are found to be constant upon examination of numerous specimens of both forms. The body is thicker and much broader anteriorly across the post-orbital apophyses; the angles are all more obtuse. The dorsal surface is marked with fewer tubercles, which are also much larger and more obtuse, most of them being rather swellings than warts. The rostrum is shorter and less acute; and the superior fissure of the orbit is always closed, its margins overlapping.

It is subject to considerable variation in some of its characters, particularly in the greater or less approximation of the forks of the rostrum, which may be so closely appressed against each other as to overlap, or may diverge so as to leave a narrow V-shaped space between. They diverge most in the young. The feet and inferior surface of the body are densely hirsute in some individuals and quite smooth in others.

Equivalent to *Chionœcetes opilio* (O. Fabricius).—M. J. R.

† See page 69.

The color is a dusky brick-red above; whitish below. The dimensions of a male from the Arctic Ocean, north of Bering Straits, are: Length of carapax, 2.85; greatest breadth, 2.12; greatest post-orbital breadth, 1.75; breadth at constriction, 1.59 inches.

This species was found by us in great numbers in all parts of the North Pacific Ocean north of the parallel of 50°. The following localities may be mentioned: Sea of Ochotsk; Avatscha Bay and off Chepoonski Noss, coast of Kamtschatka; off Matwi Island; in Behring Straits, and in the Arctic Ocean. It occurred on all kinds of bottom, from low-water mark to a depth of 50 fathoms or more. Among several hundred specimens of this species, not one of *H. araneus* was found, although this latter species is said by Brandt to occur in the sea of Ochotsk.

The specimens from the waters of Avatscha Bay, which are somewhat brackish, do not differ from those taken in the open sea.

Brandt, in the Zoölogy of Middendorff's Reise in den Sibiriens, Part 1, page 78, describes a *Hyas* from the Sea of Ochotsk, which he considered a variety (*alutaceus*) of *H. coarctatus*. He states, however, that it differs from the Atlantic form in the somewhat more strongly granulated (stärker chagrinirte) upper surface of the carapax; in the broader posterior side of the body, and in the broader hands. These characters are certainly not those of our species, and for this reason we have not applied to the Pacific form the name *alutaceus*. In some of the larger specimens the surface is indeed granulated to some extent, particularly at the summits of the swellings; but specimens of ordinary size are always much smoother than any from the Atlantic. It is not impossible, therefore, that there is still another species in the North Pacific.

Genus **MICROPISA** Stimpson.*

It has been found necessary to institute a new genus for the reception of a small *Pisa* like crustacean which was taken in considerable numbers at the Cape de Verde Islands. It has a short and broad ovate carapax and flattened rostrum. The orbits are much less complete than in *Pisa*, and have a single fissure above. It resembles *Scyra* in many respects, but the external antennæ are not concealed beneath the rostrum. The outer maxillipeds resemble somewhat those of *Pisa;* but the outer angle of the almost heart-shaped third joint is strongly projecting, and there is no notch for the reception of the fourth joint; the palpus is broad.

Micropisa ovata Stimpson.

Proc. Acad. Nat. Sci., Phila., IX, p. 217, 1857.

In this little crab the carapax is rather depressed, and but little longer than broad. The regions are sufficiently prominent, but generally smooth and rounded; there are, however, three inconspicuous pro-

*Not distinct from *Herbstia*.—M. J. R.

tuberances on the genital, and three on each branchial region. Surface pubescent, the more prominent portions often surmounted by a few curled setæ. The antero-lateral margin is swollen, but without teeth, except that immediately behind the postorbital tooth, and a small conical one at the lateral extremity of the branchial region. The chelopoda of the adult male are robust; the merus toothed along the angles; the hand smooth, somewhat compressed, and surmounted above by a ridge. Posterior four pairs of feet pubescent, the merus with a small tooth at the summit and one or two near the base. Length of carapax, 0.4; width, 0.38 inch.

Several specimens were taken in the harbor of Porto Praya, Cape de Verde Islands. They were dredged on a nullipore bottom at the depth of 20 fathoms.*

Micippa spinosa Stimpson.†

Body depressed; proportions of the carapax, breadth to length, as 1 to 1.3; upper surface uneven, crowdedly tuberculated and setose. Spines of the back few in number, but long and slender, with blunt extremities. There are three spines on the median line, two of which are on the gastric region, and one, the largest of all, on the cardiac. A large spine on each side on the branchial region, between which and the postorbital tooth on the lateral margin, there are nine spines, irregular in size and distance. Posterior margin spinulose, three or four spines near the middle being larger than the others. Rostrum inclined at an angle of 45° and bent at its extremity into the vertical plane; it is dilated at the extremity, the corners being broadly rounded and minutely crenulated; at the middle there are two diverging teeth. Ocular peduncles rather short, in length little more than twice their diameter. Orbit with two fissures above, the inner one closed, the outer open, separating the postorbital tooth. The pterygostomian (regions) are full convex, tuberculated, and not setose. The third joint of the outer maxillipeds is greatly expanded at its antero-exterior angle; the second joint is marked with a longitudinal furrow near its outer margin. The basal joint of the outer antennæ is very broad, its anterior tooth short, with nearly smooth margin; second joint oblong, compressed, with the margin ciliated with long hairs. Chelopoda equalling the carapax in length, smooth and glossy, fawn colored, with white bases; carpus and hand minutely and obsoletely granulated; fingers with black tips. Ambulatory feet compressed, thickly hairy, the merus with a small terminal spine above. Color of the body pale reddish, rendered indistinct by an accumulation of sordes retained by the setæ.

* A. Milne Edwards (Nouv. Arch. Mus. d' Hist. Nat., IV, p. 51, pl. XVI, fig. 1, 1868) represents this species with several unequal lateral teeth, and the ambulatory legs regularly tuberculose.—M. J. R.

† See page 92.—M. J. R.

Dimensions: Length of the carapax, 0.75; greatest breadth, 0.59; distance between tips of postorbital teeth, 0.45; length of first pair of ambulatory feet, 0.86 inch.

Specimens of this species were dredged on a muddy bottom in 6 fathoms in the harbor of Sidney or Port Jackson, Australia.

Micippa hirtipes Dana.

Micippa hirtipes, Dana; U. S. Exploring Expedition, Crust. 1, p. 90, pl. 1, fig. 4, 1852.

The following description is drawn up from specimens preserved in spirits; it may be useful, as Dana's specimens were dried: The body is moderately depressed; carapax minutely and somewhat unequally tuberculated above, without spines, except a small one at the branchial region on each side and a marginal one in front of this; these are continuous with the series of teeth on the antero-lateral margin. The posterior margin is denticulated with granular tubercles somewhat larger than those of the surface; the median two being larger and dentiform. The antero-lateral margin curves upward a little and shows nine minute teeth, two of which in the depression between the hepatic and branchial regions are much larger than the others. The superior margin of the orbit is two fissured. The eye peduncles are exposed throughout their length and fully reach the tips of the teeth formed by the external angle of the orbit. Rostrum broader than long; its upper surface with two convex ridges; extremity broader than the base and four-toothed, the middle teeth being short, triangular, and blunt, the lateral ones sharp and curved upward. The movable part of the antennæ is at the base of the rostrum, separated from the orbit only by the narrow projecting terminal edge of the basal joint, which, seen from above, forms a slender tooth. Below the surface of this basal joint is smooth.

The upper surface of the body is hairy, the ambulatory feet densely so; hectognathopoda also hairy. First pair of ambulatory feet long. Dactyli much curved. The dimensions of a female specimen are as follows: Length of the carapax, 0.59; greatest breadth, 0.48 inch; proportion, 1: 1.23; length of first pair of ambulatory feet, 0.64 inch.

Our specimens differ somewhat from Dana's figure in the greater prominence of the tooth of the basal joint of the antennæ, which projects so as to appear conspicuously above. The species is, however, undoubtedly the same. It approaches *M. philyra* in character, but is more hairy, the margins with smaller teeth, the teeth of the rostrum shorter and the outer ones recurved, and the movable part of the antenna not widely separated from the orbit. It has also some resemblance to *M. platipes* Ruppell, but has not the sharp terminal rostral teeth of that species.

Our specimens were taken at the islands of Loo Choo and Ousima. Those of the Exploring Expedition are from Tongatabu.

*A synonym of *Micippa philyra* (Herbst).—M. J. R.

Micippa Haanii Stimpson.*

The Japanese specimens of this species are said by De Haan to differ from the original specimens of *Cancer thalia* described by Herbst in wanting the two spines on the posterior margin of the carapax, and in having a spine on the merus of the ambulatory feet near its superior extremity. In all of our specimens from the Chinese Sea the characters are the same as those found in De Haan's figure and description, while none present the above-mentioned characters of *C. thalia*. Nor do they agree with the description of Herbst's specimen given by Gerstæcker in the Archiv für Naturgeschichte, vol. XXII, p. 109. Under these circumstances we have been led to consider the species distinct, and to propose a new name for De Haan's crustacean.

M. thalia Krauss, which inhabits the coast of South Africa, seems also distinct from the Herbstian species.

Naxia dicantha De Haan.†

In living specimens of this species the body is covered with sordes; when cleaned it is found to be of a yellowish-brown color above and below, the feet annulated with pale purplish-brown. There is a great diversity in the size of the hand and the shape of the fingers, shown between large males and those of ordinary or small size, as mentioned by De Haan.

The diversity in the shape of the rostrum in *Naxia serpulifera* and *N. dicantha* does not seem of sufficient importance to warrant a generic separation. The deep orbits, with peculiar fissures widening at the bottom, are characteristic of both; although in *N. dicantha* the inferior fissure is much broader than in the other species. There is, however, in the Japanese species a notch in the margin of the merus of the hectognathopod at the insertion of the carpus; while in *N. serpulifera*, judging from Guérin's figure, that margin is entire.

Naxia dicantha was taken by the expedition at the following localities: Hong Kong Harbor, abundant on shelly bottoms in 10 fathoms; northern China Sea in 20 fathoms; Kagosima Bay, Japan, in 20 fathoms, shelly bottom.

Scyra compressipes Stimpson.

Proc. Acad. Nat. Sci. Phila., IX, p. 218, 1857.

Carapax irregularly ovate, proportion of breadth to length 1:1.27 (rostrum and lateral spines included). It is rather depressed posteriorly, well contracted between the hepatic and branchial regions. Gastric region ample, rounded above, and nearly smooth, with the exception of two or three minute tubercles along the median line and

* Equivalent to *Micippa thalia aculeata* (Bianconi). See page 92.—M. J. R.

† See page 85.

one on either side posteriorly. There is a sharp tubercle on each side at the hepatic region, and a short, sharp spine, extending horizontally and somewhat curving forward, at the summit of each branchial region. Cardiac and intestinal regions rather small and only moderately elevated. Posterior margin with a slightly prominent tubercle at the middle. Rostrum scarcely as long as broad, laminiform, scarcely contracted at base; horns shorter and less acuminate than in *S. acutifrons*. Præorbital tooth prominent and acute, but rather short. Parts about the head below much as in *S. acutifrons*. The tooth forming the external angle of the orbit is deeply concave below, leaving the orbit at that point widely interrupted. Margin of the pterygostomian region with three small, obtuse, lobe-like teeth; a deep sinus separates this margin from that of the side of the carapax. Feet all much compressed. Merus of chelopoda four-sided or prismatic, obtusely tuberculated along the angles; superior edge with blunt teeth near the base, and one prominent sharp tooth near the extremity, being one of three large teeth surrounding the insertion of the carpus. Superior and inferior edges of ambulatory feet somewhat setose; the penultimate joints of these feet, however, are smooth and slender. In this and the other known species of the genus the setæ are stout and clavate in form. The dimensions of a sterile female are: Length of carapax, 0.65; greatest breadth, 0.51 inch.

This species was dredged in the Harbor of Hakodadi, Island of Jesso, Japan, on a bottom of weedy sand, at the depth of 6 fathoms.

Only one other species of the genus is known, *S. acutifrons* Dana, which inhabits the opposite coast of the North Pacific.

Dione affinis de Haan.*

The only specimen taken is young; the dimensions of the carapax being, length, 0.57; greatest breadth, 0.41; breadth between præorbital spines, 0.35 inch. Proportion of this interorbital breadth to the length, 1: 1.63. This proportion, in de Haan's figure, is 1 : 1.93. Our specimen differs from those described by de Haan in its more depressed form, its narrower and smoother carapax and broader front. There is no tooth within at the base of the movable finger, and none on the outer base of the hand. The horns of the rostrum are longer than in the adult *D. affinis*, and the abdomen of the male is not dilated near the base.

Having no opportunities of comparing our specimen with the young of the species to which it is here referred, we do not venture to consider it distinct.

It was taken in a harbor on the northwest coast of the Island of Ousima.

*Equivalent to *Schizophrys aspera* (Milne Edwards). See page 91.—M. J. R.

Mithrax suborbicularis Stimpson.*

Plate VIII, Fig. 2.

Proc. Acad. Nat. Sci. Phila., IX, p. 218, 1857.

This species belongs to the division *Mithrax transversaux* of Milne Edwards. The following description is taken from a sterile female, the only specimen found: Carapax rounded, not narrowed anteriorly; length and breadth equal; margins dentated with teeth of moderate size. Gastric region broad and convex. Upper surface with about thirty small, nearly equidistant, prominent warts, the interspaces granulated. Rostrum formed of two small, sharp, triangular, diverging horns, outside of which on either side project three slender spines belonging to the anterior margin of the basal joint of the antennæ. Eyes large. Superior margin of orbit with two deep fissures, and three teeth, the middle one of which is short, truncate, with a trifid clove-like apex. The tooth at the external angle of the orbit is rather long and sharp, curving forward; immediately behind this there are two teeth on the antero-lateral margin just in front of the hepatic constriction. Behind this constriction on the lateral margin of the carapax there are six teeth, the posterior ones very small, and placed rather above than on the margin. At the posterior extremity of the shell there are two small, blunt submarginal teeth. Outer pterygostomian regions with granulated surface upon which arise a few tubercles. Hectognathopoda and the adjoining triangular surface smooth and ungranulated. Fossæ of the inner antennæ excavated in the inferior side of the horns of the rostrum. Chelopoda small, slender, smooth, and glossy. Ambulatory feet hairy above; three of the joints spinulose; below smooth. Those of the posterior pair nearly smooth above.

The color in the preserved specimen is white, tinged with reddish brown. Dimensions: Length of carapax, 0.8; greatest breadth, the same; breadth between tips of the larger spines of the antennæ, 0.4; between tips of the spines at outer angle of orbit, 0.57 inch.

It was taken at Selio Island, Gaspar Straits, by Mr. L. M. Squires of the steamer *John Hancock*.

Eurynome longimana Stimpson.

Plate VIII, Fig. 1.

Proc. Acad. Nat. Sci. Phila., IX, p. 220, 1857.

Carapax with the regions distinct but not deeply separated; proportion of breadth to length, 1 : 1.38. Upper surface rugose, the rugosities consisting of rounded, flattened warts, somewhat irregular in size, and sometimes confluent. A large triangular tooth behind the orbit at the hepatic region; five teeth on the branchial region, four of which are

**Cyclomaia suborbicularis* Stimpson, Amer. Jour. Sci., XXIX, p. 133, 1860.

Cyclax (*Cyclomaia*) *suborbicularis* Miers, Jour. Linn. Soc. London, XIV, p. 660, 1879.—M. J. R.

marginal or submarginal, and one erect at the center of the region. Two small spines on the gastric region. Cardiac region rather prominent, oblong. Posterior margin with a slight protuberance on each side. Rostrum deeply bifid; horns long and sharp, somewhat divergent. Orbits and antennæ much as in *E. aspera*, except that the superior orbital fissure is not open. Hectognathopoda roughly granulated. Chelopoda of male nearly twice as long as the carapax, granulated and somewhat spinous; hand rather slender, with three or four stout spines toward extremity on superior inner margin. Pincers deflexed. Ambulatory feet bicarinate above, the carinæ most distinct on the merus, where they are each 3–4 toothed.

In the female the carapax is pubescent and more convex than in the male; the chelopoda are very short, and the hand scarcely twice as long as broad.

Colors: Carapax above dull red; feet whitish, or variegated with pale red. Eyes small, black. Dimensions of ♂, length of carapax, 0.47; breadth, 0.34; length of rostrum, 0.12; of chelopod, 0.8 inch; of ♀, length of carapax, 0.39; of chelopod, 0.3 inch.

Dredged in 10 fathoms, on a rocky bottom, among Gorgoniæ, etc., in False Bay, Cape of Good Hope.